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No. 1

ORIGINAL ARTICLES

ON THE CAUSATION OF THE CONGENITAL STRIDOR OF INFANTS.*

By JOHN THOMSON, M.D, F.R.C.P., Edin.,

Physician to the Royal Hospital for Sick Children, Edinburgh, and

A. LOGAN TURNER, M.D., F.R.C.S., Edin.,

Surgeon for Diseases of the Ear and Throat, Deaconess Hospital,
Edinburgh.

THE clinical features of a typical and simple case of congenital stridor may be summarized as follows: The infant, who appears normal in other respects, is noticed shortly after birth to have noisy breathing. The noise consists of a croaking sound accompanying inspiration, which rises to a high-pitched crow when a longer or more vigorous breath is taken; expiration may be accompanied by a short croak when the stridor is loud, but at other times it is noiseless. Even in the most severe cases there are occasional brief intervals during which there is no sound audible; but, with this exception, the stridor goes on constantly while the child is awake, and sometimes even when he is asleep. Any emotional excitement or any physical cause of deep breathing, such as exposure to colder air or to the exertion of sucking, is

* Read in the Section of Diseases of Children at the annual meeting of the British Medical Association, Ipswich, July-August, 1900.

apt to intensify the sound. The child's power of crying and coughing is unaffected. The breathing, although noisy, is not accompanied by the slightest distress, and there is no cyanosis. There is, however, always marked inspiratory indrawing of the thoracic and abdominal walls, except in the mildest cases.

The stridor increases in loudness during the first few months, and, after remaining about the same for a few more months, gradually lessens and disappears during the course of the second year. Long after it ceases to occur habitually, however, it is occasionally set up by emotional causes.

Considerable difference of opinion has been expressed as to the causation of these cases. The symptoms have been attributed to posticus paralysis (Robertson) or to abductor spasm, due to adenoids or to some other source of irritation (E. Smith, Löri). Some, again, have blamed an enlarged thymus (Avellis), and others a congenital malformation of the upper aperture of the larynx (Lees, Sutherland and Lack, Variot, Reislund). Attention has also been drawn to the soft collapsible character of the laryngeal structures in the infant (Goodhart, etc.), and one of us (Thomson) has already suggested the view which we confirm and further elaborate in this paper. This view is that the primary cause of the obstruction is probably an ill-co-ordinated spasmodic action of the muscles of respiration—a choreiform respiratory spasm—analagous to stammering—as distinguished from a laryngeal spasm.

The site of the obstruction which causes the noise has variously been thought to be in the pharynx, at the upper aperture of the larynx, at the cords, and in the trachea at the level of the thymus. In the presence of so much difference of opinion it seemed to us worth while to make a further attempt to ascertain what facts can be established with regard to these cases, and to what extent the various theories of causation are in keeping with them.

As the condition is entirely confined to young infants, it will be well to begin by referring to the peculiarities of the larynx and of the breathing at this time of life.

THE LARYNX OF THE YOUNG INFANT.

Our observations upon the anatomy of the larynx in infants

and young children have been based upon the examination of fifty specimens removed from subjects in whom no obstruction of the upper respiratory passages existed. For the majority of these we are indebted to the kindness of Dr. Theodore Shennan, pathologist to the Royal Hospital for Sick Children and to the staff of the Royal Maternity Hospital. The larynges of the still-born infants were, in many cases, examined *in situ* by means of a dissection which exposed them from behind; the remainder, taken from children up to the tenth year of life, were examined after removal from the body by the ordinary *post mortem* method. Our attention was directed mainly to the upper aperture of the larynx. This opening may be defined anatomically as the space bounded in front by the epiglottis, behind by the summits of the arytenoid cartilages with the intervening fold of mucous membrane, and laterally by the two ary-epiglottic ligaments. When the term "upper aperture" is employed in this paper, the space enclosed by these structures is signified.

In the infant the structures bounding this opening are much softer and more collapsible than they are in the adult; further, the aperture is relatively narrower from side to side, owing to the folding backwards and inwards of the epiglottis with the consequent drawing together of the ary-epiglottic folds. This infantile type, which has been described by Merkel, Luschka, and other anatomists, is represented in Figs. 1, 2, and 3, reproduced from the most typical of our own preparations. In them the epiglottis is seen to be distinctly gutter-shaped in its posterior aspect, while the soft and yielding ary-epiglottic ligaments are approximated so as to narrow the upper aperture. As the child grows, a change takes place in the form of these parts; the epiglottis becomes more expanded, the ary-epiglottic folds separated, and the aperture in this way broadened. Fig. 4 represents the larynx of a child aged $3\frac{1}{2}$ years; in it the opening is wider; while in Fig. 5 is depicted the larynx of a boy 9 years of age, in which the infantile type had almost entirely disappeared. Fig. 6 shows the adult type of the same region, which demonstrates the more expanded leaf-like form of the epiglottis, the greater separation of the ary-epiglottic folds, and the consequent increased breadth of the intervening aperture.

While varieties are met with in different infantile larynges

at the same period of life, all of them possess in a more or less marked degree the characteristics above described. These peculiarities combine to make the upper aperture of the larynx liable to constant changes in form under the action of influences which have no corresponding effect on the adult organ. The most important influence of this kind is the sudden drawing of air into the larynx. In the larynges of new-born children and very young infants, the effect of this can be easily demonstrated after death by the following simple experiment: A bent metal tube, 18 inches in length, is introduced into the trachea and, in order to keep the chink of the glottis open, a small piece of rubber tubing is at the same time placed between the vocal cords. forcible inspirations are then made through the tube, and it is found that with each a very striking alteration in the form of the upper aperture of the larynx occurs. The exact change, however, varies in different cases; we have noticed three main types:

1. In some cases the sides of the opening were sucked together so as to form a narrow mesial slit:
2. In others the epiglottis was drawn backwards and downwards so as to act as a lid.
3. In others, again, the arytenoid cartilages met in the middle line, while the margins of the interior portion of the aperture remain unaffected.

Figs. 7 and 8 show the upper aperture of the larynx of a still-born infant before and during the carrying out of such an experiment. In Fig. 7 the open aperture is seen before the experiment, while in Fig. 8 the epiglottis is markedly folded backwards, and the ary-epiglottic ligaments are in contact mesially.

In two of our experiments the upper aperture assumed a form almost exactly similar to that figured by Refslund (Fig. 10), but unfortunately we have not succeeded in securing a photograph of this result.

When this experiment is repeated several times with the same larynx, we find that its upper aperture retains, to a very considerable degree, the deformity which the suction has produced. Thus, when the upper aperture collapses on suction so as to form a vertical slit, the ary-epiglottic folds will be found after a few experiments to lie permanently nearer one another.

The objection will doubtless be raised by some that such experiments conducted upon the cadaver cannot be regarded as entirely trustworthy, because the exact conditions which exist during life are not present. We would point out, however, that the ary-epiglottic folds, which are mainly concerned in the production of the deformity, contain only a few muscular fibers, and are thin, lax folds of mucous membrane which are readily acted upon by such a mechanical force as the sucking in of air between them. Further, it must be sufficiently well known to all who have attempted to examine during life the larynx of healthy infants and young children that the ary-epiglottic folds tend to become approximated when the child forcibly inspires during the examination; that is to say, that these structures are capable of assuming in the living body the same position that they can be made to take up in the cadaver and as a result of a similar cause.

RESPIRATION IN THE YOUNG INFANT.

The respiration under normal conditions in very young children is peculiar in being irregular in rhythm and in force, as if the co-ordination involved in its movements were not as yet under full control. There often occur, therefore, relatively sudden respiratory efforts. When a young baby is excited, it is no uncommon thing for it to develop a temporary crowing noise with inspiration, although it has none at other times. A similar, but louder and more persistent crowing, which indeed exactly resembles that in a case of infantile stridor, is not infrequently observed in young infants while they are beginning to come out of chloroform narcosis; and a very loud crowing is a common accompaniment of operations on the genital organs, owing to the sudden forcible inspiration which the stimulation of these parts is apt to occasion. Along with crowing, there is always a degree of indrawing of the lower chest wall proportionate to the loudness of the sound.

We must now turn to consider the conformation of the larynx and the character of the respiration in children who are the subjects of congenital stridor.

THE LARYNX IN STRIDOR CASES.

A peculiarity of form of the upper aperture of the larynx, which differs in degree, but is always essentially the same in

nature, has been described and figured by various writers (Figs. 9 and 10). We believe that some degree of this is always present in cases of congenital stridor. It may be said to consist in an exaggeration of the normal infantile type, and it is practically the same as that which can be induced *post-mortem* in the larynges of many newborn children by suction through a tube. In two of the published cases the upper aperture was found to be reduced to a mere slit. In both of these the patient died from respiratory disease, and presumably had severe dyspnea immediately prior to death.

Fig. 9 shows the larynx in the fatal case of congenital stridor described by Dr. Lees, and we are indebted to him for kind permission to reproduce it here. The patient, an infant of a year old, had suffered from stridor since birth, and died of laryngeal diphtheria.

Refslund's patient (Fig. 10) was an infant aged $2\frac{1}{2}$ months who had been the subject of persistent crowing from birth. Death took place from pneumonia, and an examination of the larynx showed the upper laryngeal aperture reduced to a mere slit. Variot's patient was a boy aged 1 year and 10 months who began to suffer from inspiratory stridor shortly after birth. He died from scarlet fever, and the upper aperture showed a lesser degree of the same deformity.

The peculiar conformation may continue long after the breathing ceases to be noisy. We have examined five children between 7 and 9 years of age whom we had previously seen with congenital stridor, and in all of them the deformity still persists to some extent.

PECULIARITY OF RESPIRATION IN STRIDOR CASES.

The respiration in these cases differs from that in normal babies in being accompanied by inspiratory croaking and crowing sounds, which vary in loudness according to the vigor of the inspiration, and by the occurrence of a corresponding amount of thoracic indrawing. The stridor is nearly constant in well marked cases, but never entirely so, there always being occasional free intervals. When the inspiratory crow has lasted some time, and is loud, there is apt to be expiratory croaking also. We have thus in these cases the habitual presence of a condition of stridorous breathing, the same as occurs temporarily during recovery from chloroform narcosis.

CONCLUSIONS.

Our most important conclusions may be stated as follows:

1. That the primary element in the causation of this condition is a disturbance of the co-ordination of the respiratory movements, probably due to some developmental backwardness of the cortical structures which control them.

2. That the change of form found is merely an exaggeration of the normal infantile type, and is mainly if not entirely the result of a constantly recurring sucking in of the upper aperture of the soft larynx, which is induced by the ill co-ordinated and spasmodic nature of the breathing. That it is, in fact, an acquired deformity strictly analogous to pigeon breast.

3. That there is no proof that any congenital malformation of the upper laryngeal aperture exists in these cases.

4. That the supposition of a congenital deformity is not essential to account for the symptoms, inasmuch as normal babies crow in a very similar manner when they are coming out of chloroform.

5. That the sounds are not produced in the pharynx. This is proven by the high-pitched phonic character of the crow, and also by the fact that the stridor persists, not only when the nostrils are closed, but equally when the mouth is occluded by the nipple when the tongue is depressed by a spatula, and during yawning. That they are not produced in the trachea by compression exerted by a large thymus or enlarged lymphatic glands, we conclude on two grounds. First, because in none of the fatal cases of congenital stridor recorded have we seen enlargement of the thymus or lymphatic glands noted; and, secondly, because in two cases which we have examined, in which compression of the trachea by enlarged bronchial glands was found after death, the symptoms were of a very different type. In these cases the stridor was mainly expiratory, the larynx did not move up and down with respiration, as it does in cases of intra-laryngeal obstruction, and there was much greater respiratory distress. The stridor is probably produced partly in the larynx proper, and partly at the abnormally approximated ary-epiglottic folds.



FIG. 1.—Child aged ten weeks.

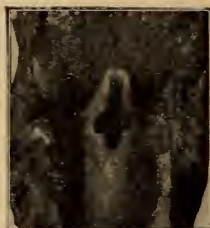


FIG. 2.—Child aged three months.

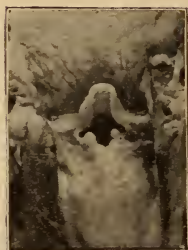


FIG. 3.—Child E., aged three months.



FIG. 4.—Child aged three and a half years.



FIG. 5.—Boy, aged nine years.



FIG. 6.—Adult larynx.



Before experiment.



During experiment.

FIGS. 7 and 8.—Larynx of newborn child.



FIG. 9.—Lees' case of infantile stridor, aged 1 year, death from diphtheria.



FIG. 10.—Refslund's case of infantile stridor, child, aged 2½ months, death from pneumonia.

6. That the neurosis causing the symptoms has not in our experience seemed to depend on the presence of adenoid growths or other obvious causes of reflex irritation.

It may be well that we should add a few words to define as clearly as possible how our position differs from that held by Drs. Sutherland and Lack in their paper already referred to, which seems to us by far the most important contribution made to the subject. We are cordially at one with them when they say "that the affection depends on a valvular action of the upper aperture of the larynx, a falling inwards of its lateral walls during inspiration," and that this is due partly to "flaccidity of the parts in infants." We join issue with them altogether, however, when they ascribe primary etiological importance to the peculiar conformation of the upper aperture found in these cases, and regard it as a congenital malformation. We consider it an acquired deformity, and hold that it, as well as the stridor, are the result of the ill co-ordinated stammering breathing.

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A STUDY OF THE PLANTAR REFLEX IN INFANCY.

By JOHN LOVETT MORSE, A.M., M.D.,

Instructor in Diseases of Children, Harvard Medical School; Assistant Visiting Physician at the City Hospital, and at the Infants' Hospital, Boston.

THE objects of this study were to determine if possible, whether or not the plantar reflex is present in infancy; if present, its character; and if absent in early infancy, at what age it is developed. Incidentally, it was hoped that something might be learned as to the value of the Babinski phenomenon in the diagnosis of nervous diseases in infancy. With these objects in view 254 consecutive infants under two years of age not suffering from any form of nervous disease, were examined in the out patient department of the Infants' Hospital.

The conclusions of the few observers that have studied the plantar reflex in infancy are somewhat at variance. Babinski found that in the new-born irritation of the sole of the foot normally caused extension of the toes. He attributed this extension to the imperfect development of the pyramidal tracts at birth, and considered it as proof of the dependence of the toe phenomenon upon disturbance of the function of the pyramidal tract.

Cestan and LeSourd found that in infants under a year, tickling the sole of the foot normally provoked extension of the toes. They were unable to determine at what age the plantar reflex ceased to react normally by extension to take the form seen in adults.

Collier found extension the earliest response in infants.

Cohn found the plantar reflex generally absent in infants, but when present it usually consisted in extension of the great toe.

Kalischer was unable to draw any definite conclusions as to the plantar reflex in young children because of the many voluntary motions. He found the movements of the toes in adduction and abduction very pronounced in young children. He also found dorsal flexion of the toes under normal conditions. He attributed the normal dorsal flexion in young children to the fact that in them the foot is still an organ for grasping and not for walking. He concluded that in infants

dorsal flexion of single toes occurs frequently under normal conditions, and hence that definite conclusions can only be drawn from the toe phenomenon if it occurs with every irritation, is marked, and limited to one side.

Schüler found no reflex in 40 per cent. of infants, extension, especially of the great toe, in 12 per cent.; flexion in 30 per cent; variable in 18 per cent. The 40 per cent. in which no reflex was obtained was made up almost entirely of infants under one year.

Passini tested the toe reflex very carefully in 100 children under one year. He apparently accepted extension as the normal reflex in infancy but did not state it. In 6% there was no reflex. In normally developed children flexion predominated in the last quarter of the first year. In backward children extension continued longer. The occurrence of flexion corresponded to the development of the individual.

Finizio studied the plantar reflex in over 500 new-born infants in the Maternity at Naples. He notes the difficulties of exact observation in young infants. The plantar reflex was absent in 5% and indefinite in 10%. In 15% there was extension of the great toe or of all the toes and in 70% flexion of the toes. The cases in which there was extension were generally those in which the births had been abnormal.

Walton and Paul found it extremely difficult to determine the nature, or even the existence, as regards the toes, of a definite plantar reflex in early infancy. They found that the same infants reacted differently at different times. Forty infants under two weeks old were examined. The upward movement predominated, but not with sufficient constancy to establish a rule. In their opinion the Babinski phenomenon is not constant in early infancy, in fact, they question the existence of a characteristic toe reflex at this period. They conclude that there is no constant or characteristic plantar reflex in early infancy, though extension is rather more frequent than flexion. They were unable to determine at what age the plantar reflex is established, but their study of thirty older infants tended to show that it is not developed until after the first year.

A moderately sharply pointed orange stick was used for testing the plantar reflex. It was drawn, not too rapidly or too forcibly, from the heel towards the toes along the outer side and middle of the foot. Each foot was always tested several times in order to avoid error.

The flexion of all or some of the toes was accepted as the flexor reflex. The extensor reflex was limited to the deliberate marked extension of the great toe, with or without extension or separation of the other toes. Especial care was taken not to accept dorsal flexion of the foot, including the toes, as the extensor reflex. It is probable that this dorsal flexion of the foot, as a whole, has been mistaken by some observers for the true extensor reflex, and this fact may explain the discrepancy in the results of various observers. Great difficulty was experienced in many cases in determining the presence or absence of a reflex because of the tendency of infants to hold their feet rigidly, and because of their almost constant, purposeless movements. Most babies when their feet are uncovered either keep them in constant motion, flexing, extending or separating the toes, or hold them rigidly in flexion or extension. It is very difficult to catch the feet relaxed long enough for a satisfactory examination.

The following table shows the result of examinations in 254 cases:

Age in months.	Number of cases.	Flexion on both sides.	Extension on both sides.	Flexion on one side. Extension on one side.	Flexion on one side. No reflex on one side.	Extension on one side. No reflex on one side.	No reflex on either side.	Dorsal flexion of feet.	Drawing up of legs.
0-1.....	13	2	1	1	...	...	9	...	4
1-2.....	29	2	7	2	2	...	16	4	8
2-3.....	23	4	6	...	2	2	9	6	1
3-4.....	26	1	8	...	4	2	11	1	6
4-5.....	12	...	8	...	...	...	4	6	1
5-6.....	23	5	4	2	2	1	9	...	4
6-7.....	14	...	4	...	1	1	8	4	1
7-8.....	15	4	5	2	1	...	3	2	...
8-9.....	15	1	2	1	...	2	9	1	1
9-10.....	13	5	3	...	2	2	1	2	...
10-11.....	9	4	1	1	...	1	2	...	...
11-12.....	8	5	...	1	...	1	1	...	...
12-13.....	6	2	1	...	...	2	1	...	...
13-14.....	6	5	...	...	1	...	...	...	1
14-15.....	4	2	...	...	...	...	2	1	...
15-16.....	7	4	1	...	1	...	1	...	...
16-17.....	9	6	1	...	...	1	1	1	1
17-18.....	7	3	...	2	1	...	1	...	...
18-19.....	5	2	2	1	...	...	...	...	...
19-20.....	4	2	...	...	...	...	2	...	...
21-22.....	2	2	...	...	...	...	...	...	...
22-23.....	4	3	...	...	1	...	...	...	...
Total.....	254	64	54	13	18	15	90	22	28
Per cent.	...	25.5%	21.5%	5 %	7 %	6 %	35%	8.5%	11%

That is, in 35 per cent. of the cases there was no plantar reflex; in 7 per cent., no reflex on one side and flexion on the other; in 6 per cent., no reflex on one side and extension on the other; in 5 per cent., flexion on one side and extension on the other; in 25½ per cent., flexion on both sides; in 21½ per cent., extension on both sides. Further analysis shows that the reflex was absent on both sides much more often in the first than in the second year and much more frequently in the first nine than in the last three months of the first year. It also shows that extension on both sides was much more frequent than flexion on both sides during the first nine months, while the condition was reversed after this age. Extension on one side with flexion on the other and extension or flexion on one side with no reflex on the other occurred with about equal frequency at all ages. Dorsal flexion of the feet and marked drawing up of the legs were not uncommon reactions in the first year, but occurred very rarely in the second year. The following table shows more clearly the differences between the conditions in the first and second years:

	1st year. (200 cases).	2d year. (54 cases).
Flexion on one side, extension on the other.....	5 %	5.5 %
Flexion on one side, no reflex on the other.....	7 %	7.5 %
Extension on one side, no reflex on the other.....	6 %	5.5 %
No reflex on either side	41 %	15.0 %
Flexion on both sides;.....	16.5 %	57.5 %
Extension on both sides.....	24.5 %	9.0 %

That is, in the first year, extension on both sides was much more frequent than flexion on both sides, but there was no reflex in as many cases as in the two other classes combined (41 per cent.). In the second year, while there was no reflex in 15 per cent. of the cases, there was flexion on both sides in 57½ per cent. and extension on both sides in only 9 per cent.

Conclusions.—It is evident, therefore, that there is no constant plantar reflex in the first year, and that while the reflex approaches the adult reflex during the second year, it is still inconstant. It is also evident that since there is no constant reflex under normal conditions during the first two years, no conclusions can be drawn from the presence, absence or character of the reflex in the diagnosis of abnormal condi-

tions of the nervous system at this age. Further observations are necessary to show at what age the normal reflex is established. It is undoubtedly later than the second year.

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UMBILICAL HERNIA.

In the mechanical treatment of umbilical hernia in infants, children, etc., the diagram method (of De Garmo) of taking the shape is as serviceable in this as in other varieties of hernia. For umbilical hernia in infants under six months of age, as a rule, do not use a truss. A cure can usually be accomplished by using a compressor made as follows: Take a big button or a cork cut so as to press lightly into the navel and support the surrounding parts, cover this pad with a thin layer of gauze and strap down by several one and a half inch wide strips of adhesive plaster, passing about two-thirds around the body, but do not apply the strips too tightly. Change this dressing about once a fortnight. Another simple method to be used in children with fat abdomens is to pinch up the skin and subcutaneous tissues in two folds, one on each side of the hernia, and use the folds as a pad, which is retained in place by strips of plaster passing about two-thirds around the body. Cases treated in this way are usually cured in several months, but the treatment should be continued about a year. If the child is a year old or older, the conditions are somewhat changed. Treatment has to be continued longer, and it is better to apply a spring truss. The conical elevation in the center of an umbilical pad should not be too high and sharp. If a cure of the hernia does not result from mechanical means, a radical operation should be performed. Most cases in infancy are cured by mechanical treatment. If after a year of truss wearing the young children are not cured, a radical operation should be performed.—*Dr. J. Coplin Stinson, N. Y. Medical Journal.*

EDITORIAL COMMENTS

Rhetoric for Physicians

Those physicians who read the current numbers of the American medical journals have doubtless noted the simultaneous appearance in several of them of articles on "medical rhetoric," written specially for the physician and prayerfully inviting him to give more heed to his manners in the preparation of "copy." This journal is somewhat disposed to think that the space given to such articles is misapplied. Full instructions in the preparation of manuscript are to be found in the regular school and college text-books on grammar and rhetoric. These books are to be had for a song anywhere. They are authoritative and complete. If the medical man believes not these, neither will he be converted through one rose from the dead. He does not subscribe to a medical journal in order to be instructed in the difference between zoölogy (with the dieresis) and zoology (without it),—any more than to be taught how to add a column of figures, or compute interest at 4 per cent.—If the truth were told it would probably come to light that medical men prepare manuscript quite as intelligently as lawyers or engineers, or the ordinary story-writers. Where deficient primary education causes error, the only legitimate comment that may be allowed the medical journal is a plea for more rigid entrance requirements at the medical colleges. Here, we believe, lies the *fons et origo malorum*, and till this laxness is corrected and the student *begins* his professional course with an intelligent and practical knowledge of composition, discourses on medical rhetoric may as well be laid by. B.

Some of the secular papers have given
The Outbreak of Smallpox in New York sensational prominence to the small outbreak of smallpox recently occurring in this city. The Department of Health has shown itself competent in every way to deal with the conditions,

and there seems little doubt that its prompt measures will prove entirely and quickly efficacious. It is much to be regretted that the Department is not vested with discretionary power to enforce universal vaccination in the parts of the city most threatened. If the present "scare" wakens those in authority to a realization of the necessity of such a law, the outbreak may not have been altogether a misfortune. Meanwhile the more intelligent part of the community is seeking voluntarily to be vaccinated, and sore arms are to be met with on every side. The Health Department and the pharmaceutical firms have had an unprecedented demand for virus, and the discussion among medical men as to the best modes of vaccination is at an acute stage.

Accompanying the reasonable desire for protection which vaccination affords, is an equally unreasonable terror among nervous mothers, not a few of whom, it is said, are sending their children out of town to wait in safety till the danger is over. This step, it is safe to say, is quite needless. A vast majority of the children are much safer at home, where diagnosis is prompt and isolation perfect, than they could possibly be in the suburban towns. In these latter the disease is nearly as apt to appear sporadically as in those parts of the city thus far unvisited. Absolutely nothing is required except vaccination.

B.

HOW TO VACCINATE.

Site.—The insertion of the deltoid in the left arm is to be preferred in children who are old enough to walk, and in adults. The outer side of the thigh below the junction of the lower and middle thirds is a site frequently chosen in women and infants, sometimes also the junction of the middle and upper third of the leg on the outer side.

Asepsis.—The hands of the operator had best be thoroughly scrubbed with soap and water before undertaking this little operation. Wash the part to be vaccinated thoroughly with a brush and soap and water, then with plain water, lastly with alcohol on a piece of sterile gauze or cotton; allow the alcohol to evaporate.

Scarification.—Scrape a surface not over $\frac{3}{8}$ inch in diameter, so as to bring a little blood or serum. An ordinary cambric needle is the best scarifier. It should be passed through a flame or boiled before using.

Virus.—Use preferably glycerinized virus; rub it thoroughly into the scarified area with a small piece of wood which has been previously boiled. The hand of the operator should not touch that portion of the instruments which is to come in contact with the wound. Allow the part to dry in the air; no dressing is necessary.

SOCIETY REPORTS

BRITISH MEDICAL ASSOCIATION — SECTION ON DISEASES OF CHILDREN.

Sixty-eighth Annual Meeting, Ipswich, 1900.

President, Frederick Taylor, M.D.

Vice-Presidents,

Richard William Brogdin, M.D., John Thomson, M.D.

Honorary Secretaries,

William Soltan Fenwick, M.D., Alfred M. Gossage, M.D.

Wednesday, August 1, 1900.

The President of the Section, Dr. Taylor, in opening the proceedings, remarked that it was not the custom for the president to make an address. The officers of each Section arranged the subjects for discussion, and he hoped that the members present would find the subjects chosen for this one interesting. While he did not wish to encroach upon the time at the disposal of the Section, he thought that he might mention that a society had recently been formed in London for the discussion of the diseases of children. This society differs from some others, in that one-third of the members of council must be chosen from members not resident in London. This rule applied also to one of the honorary secretaries. The discussions are to take place in different hospitals, and are to consist in demonstrations of cases and an exchange of opinion upon them rather than in the form of discussion usual in such societies. He hoped that members residing in distant parts of the country would be able to contribute to the meetings of the society.

Discussion on **The Nature and Varieties of Pneumonia in Children.** Introduced by Nestor Tirard, M.D.

Dr. TIRARD, in opening the discussion, said that he had acceded willingly to the request that he should do so, because there were few subjects more satisfactory to deal with than pneumonia, especially when addressing students. In adults the typical course, the abrupt onset, the rise and course of the temperature, the altered pulse-respiration ratio, the expectoration, the altered physical signs, all lend themselves to the purpose of the lecturer who sketches a typical case and gives a clinical picture in a short time. The modifications met with in the adult are chiefly alterations in the area of lung involved, or individual peculiarities such as those due to age, alcoholism, or the co-existence of another disease. Although greater differences exist in the disease as it occurs in young people, these are perhaps narrated by those who have not studied in a children's hospital. Many suppose that most cases in children are of the nature of broncho-pneumonia which attacks lobules but produces the characteristic physical signs of pneumonia. This is generally spoken of as lobular or catarrhal pneumonia. The distinction between this and capillary bronchitis, if any, is not well defined. This form of disease is most common in infants—in children of one, two, or possibly three years of age. After this the tendency to assume the adult type increases rapidly. The majority of cases seen in a children's hospital conform to the type of lobar pneumonia, the physical signs following closely the conformation of the lobes of the lung. One lobe becomes affected by pneumonic consolidation. Over the remaining portion of the organ engorgement is perhaps more marked than in the adult, and this is probably the reason for the too great stress laid upon lobular compared to lobar pneumonia.

The nature of the disease appears to be a general infection. Comparing the symptoms to those of infectious fevers, we find an abrupt departure from health, rapid rise in temperature, and distress in breathing, which all point to the elimination of some toxic agent.

As to the organisms whose presence has been demonstrated, Fränkel's, Friedländer's, the streptococcus, etc., and the therapeutic use of various sera, from the administration of which benefit has been claimed, he did not propose to discuss. Rather would he give his attention to the question of contagion and to the modifications of types met with in children.

1. *Contagion*.—The speaker doubted whether pneumonia was really contagious in the ordinary sense of the term. The contrary has, indeed, been maintained, and epidemics have been described as creeping from bed to bed. The nearest approach to such a condition in the speaker's experience was in influenzal pneumonia, but even in this condition new cases did not seem to develop within the ward, all that occurred being some slight temporary oscillation of temperature affecting children confined to bed, but not followed by definite sepsis of pneumonia. One doubtful case he had seen in a nurse who, after nursing a case of diphtheria, was attacked by pneumonia of so virulent a type that it appeared to be septic.

2. *Modifications of Type*.—Cases might differ from the typical form in (a) the cause of the temperature, (b) the initial symptoms, (c) the physical signs:

(a) *The Temperature*.—The temperature may be unusually high and the increase may occur at the onset of the disease. In one case the temperature was 106° on admission. In the majority of other cases the very high temperatures occurred just before the crisis. Again, an unusually sharp crisis may occur. The fall of temperature may be 9° , 10° , or, in one case, $11\frac{1}{2}^{\circ}$. In the last case the temperature fell from a little over 106° to a little below 95° .

Another alteration in temperature which calls for note, because it leads to uncertainty in diagnosis, consists in wide oscillations, the difference between morning and evening temperature sometimes being as much as 5° or 6° . Yet the temperature in such cases may fall to normal about the seventh day. In one case the temperature did not finally fall till the fifth week, and but for previous experience there would have been great uncertainty in diagnosis. This irregularity is sometimes due to intercurrent disease. In one case, in a child of 13 months, it was due to diarrhea. In other cases no explanation could be found.

In true lobar pneumonia the disease is usually of the adult type, with a crisis on the fifth, sixth, seventh, or eighth day, but sometimes it lasts much longer, and although the disease begins by attacking one lobe definitely yet extension may continue to take place to other lobes.

6. *Initial Symptoms.*—These are sometimes very troublesome to deal with. The early symptoms may be very like those of tubercular meningitis. In one child of four years of age there were headache, head retraction, squint, vomiting. The temperature was 103° . The respiration rate never rose above 56, but three days after admission physical signs of pneumonia appeared, and on the seventh day the crisis occurred followed by complete recovery. In a boy of 7 years and 9 months there were severe sickness, a temperature of 106° , noisy delirium, and practically no physical signs. The case was considered acute meningitis on admission, but four days afterward doubtful physical signs appeared, which became more definite in the next two, and thereafter recovery took place by crisis.

(c). *Abnormal Physical Signs.*—In several cases, in spite of high temperature or rapid breathing with the typical catch in the breath, no physical signs of pneumonia could be discovered. In two such cases physical signs only appeared with the crisis, not before, although carefully sought for.

In anemic cases the prognosis is grave. When we see a white baby instead of a flushed baby the case is apt to end fatally.

These abnormalities he was not prepared to explain, but on the hypothesis that pneumonia is due to germ influence, the fact that high temperature is most marked when the physical signs are slight may mean the retention of toxin instead of its elimination in the exudation which produces the consolidation. In the cases described as cerebral this appears a suitable explanation. Cerebral symptoms are claimed to be more common in cases affecting the upper lobe, but a consideration of these cases rather suggests retention of toxins than a modification of the part of the lung affected. Possibly some varieties may mean differences in the organisms present. Influenza pneumonia is of a low type, and apt to have a long course, but this form is often not true lobar pneumonia, and is apt to extend gradually over the lung.

Then, again, some varieties may be due to the presence of tubercle in the lung. In some cases it is doubtful whether one is dealing with tubercle or pneumonia in the lung, and it is only as the case goes on, and harshness and dryness of the

skin develop that we are reluctantly compelled to admit the diagnosis of tubercle.

Dr. LORIMER HART said that in addition to the subdivision of cases into catarrhal and croupous, there were other subgroups, of which the influenzal was one. In the case of the noise quoted, there could be little doubt that death was due to diphtheria of the lung. Inflammation of the lung may quite well occur from such influence. In cases of sore throat one meets with different varieties of infection, such as drain-throat.

Serum therapy should be useful in cases where there was a general infection a septic character. In one village he had seen six cases of an extremely septic type of pneumonia in one week, and all died of heart failure. There was no other infectious disease about.

He thought there was little doubt that apical pneumonias are those where difficulties arise, as whether the case is cerebral or pulmonary.

Again, when physical signs develop late, this may be explained by the disease creeping to the surface, and therefore not being noticed early.

Then, since influenza has brought about a type of pneumonia, he believed that there were cases where the pneumonia might be arrested at an early stage. Even when a lobe is involved and congestion signs were present suitable treatment might sometimes prevent the stage of consolidation from developing.

Dr. NICHOLSON spoke of the character of the pulse, as shown by sphygmographic tracings:

(1). At the time of onset and for the first forty-eight hours the pressure and tension are higher than normal. After two or three days the pulse tension is less and the tracing becomes very irregular in the force of its beats, the respiratory line becomes undulating, indicating failing of the heart's muscle. The tracings resemble those seen in advanced mitral stenosis.

(2). In broncho-pneumonia the same characteristics are seen, but the tension is not so high at the commencement of the attack. There is a greater tendency to persistent fall, and hence the prognosis is more grave and the treatment more difficult than in the croupous form.

In favorable cases, after the crisis, the pulse becomes slower and the tension higher, especially when strophanthus has been used. The indication for treatment is to try to maintain the blood pressure so as to maintain the nutrition of the heart muscle through the coronary arteries. Saline injections and the abdominal ice-bag assist in this way. Digitalis is disappointing in its action on children. Strophanthus, carbonate of ammonia, and strychnine are more useful. In urgent cases hypodermic injections of strychnine are of great value. In croupous cases the use of antimony is not contraindicated in the early stages.

Dr. Gossage (London) referred to the relationship between lobar and lobular pneumonia. Recently Fraenkel's pneumococcus had been found in many cases of broncho-pneumonia. If this is the cause of the disease it must have a different mode of entrance from that obtaining in cases of lobar pneumonia. In broncho-pneumonia the infection comes through the bronchial tubes, while in lobar pneumonia it comes by way of the blood. The presence of the pneumococcus in the lung does not prove it to be the cause of the disease, although its presence in pure culture renders this possible.

Lobar pneumonia is probably more frequently than is supposed a cause of lobular pneumonia. Lobar pneumonia is an acute infectious disease and may, like other acute infections, be complicated by bronchitis, which may spread to the small bronchi and cause broncho-pneumonia. This may be the explanation of some of the different varieties that lie between lobular and lobar pneumonia.

As to the question of contagion there is no doubt that a number of different diseases are classed together as lobar pneumonia. There is the common or typical form, and a number of others not distinguished from one another. One form has been fairly distinguished, namely, one which has caused epidemics, such as one which occurred at Middlesborough. The cases were chiefly in adults and the death rate was high. An organism pathogenic to mice was found by Dr. Klein. Perhaps the village epidemic mentioned by Dr. Hart was of this kind.

Dr. FENWICK said that in young children the first symptoms are often like those of acute peritonitis. In one case he had seen there was jerky respiration, a high temperature, and symptoms very like those of acute peritonitis, but as this disease is very rare without obvious cause in young children he suggested that there might be a pneumonia starting low down with pleurisy and inflammatory changes spreading to the diaphragm. He had seen several such cases with post-mortem examinations.

As to cases simulating meningitis, he had seen one case with violent pain and opisthotonos. On the third day a small patch was found in the back. The question arose whether the pain was reflected and the symptoms due to pneumonia. This the history of the case proved to be the fact, for the patch cleared up and the child recovered.

In children also the first symptoms may be those of an acute gastro-intestinal catarrh. This is a bad sign in adults, and in young children the cases usually die.

The prognosis cannot lie on the temperature, nor on the symptoms, nor on the pulse, which varies from hour to hour. Rapid distension of the bowel has been pointed out as a symptom which is almost always followed by rapid death. The paralysis of the intestine causes great distension of the abdomen, the diaphragm is thrust up and death takes place within twenty-four hours.

Dr. THOS. LISTER.—I feel myself under a great disadvantage in having been absent from the earlier part of the meeting, and I can only add to the discussion, at the suggestion of the President, that I have had occasion to examine a number of cases of broncho-pneumonia in children post-mortem. In making cultures from these cases I have never failed to find the pneumococcus. In very prolonged cases there have sometimes been staphylococci associated with it, and in one instance, a case dying early of diphtheria and broncho-pneumonia, I found the Klebs-Loeffler bacillus associated with it. As regards the anatomy, I have examined microscopically about 20 cases of lobar pleuro-pneumonia in children under two, in all of which the alveolar exudation was of the catarrhal type. But in one instance I found a section showing exudation in the pleura, an inflamed pleura, fibrinous exudation in the alveoli immediately contig-

uous to the pleura, and catarrhal exudation in the deeper part of the lung. In attempting to explain this anatomical character of lobar broncho- or catarrhal pneumonia, it has suggested itself to me that the infection by the pneumococcus as causing specific pneumonia is a blood infection, picking out the lung for its chief lesion, but that in broncho-pneumonia the infection is one by way of the air passages, either by direct extension, or through the wall, or that as suggested by Dr. Gossage, the catarrhal condition of the alveoli is sometimes due to the extension of inflammation from alveoli containing fibrinous exudation in the neighborhood. The anatomical characters of the child's lungs normally are also in favor of a catarrhal process.

Dr. F. TAYLOR (President) said that years ago when the disease was considered local it was difficult to account for symptoms in distant parts of the body, but he thought that if the toxic theory were accepted, one could much more easily understand the cerebral, intestinal and other varieties, for one got similar combinations of symptoms in other toxic conditions, such as typhus and typhoid.

As Dr. Fenwick had remarked, abdominal pain was important, but this was not peculiar to children. He had noted the occurrence of some abdominal pain at the onset, and in one case there was also jaundice, and the house surgeon was very anxious for an operation to remove the gallstones. However, nothing was done, and next day symptoms of pneumonia appeared and eventually the patient got all right.

As to the relationship of capillary bronchitis to broncho-pneumonia, one of course recognized that a bronchitis might affect the small tubes, yet a capillary bronchitis with symptoms like broncho-pneumonia and yet not broncho-pneumonia was probably non-existent. He would like to hear Dr. Tirard's opinion on this point. As to the question of contagion, one may ask in what sense epidemics are epidemic. Before the first influenza epidemic he saw a family of four or five children, all of whom had pneumonia at the same time, or at least overlapping, indicating the coexistence of some common cause. If this can occur it is not easy to see the difference between this and the direct communication of the disease from one case to another. Yet he agreed that such communication was very rare.

He was glad to hear Dr. Tirard's views as to the elimination of toxin, and asked whether he meant that the toxin eliminated into the air vesicles might be reabsorbed and give rise to other symptoms.

What did Dr. Tirard mean by a "low" type of pneumonia? Surely toxins and bacteria had done away with such terminology. It was difficult to get away from old associations all at once, and perhaps our new knowledge may not be altogether correct.

As to the distinction between lobar and lobular pneumonia, he had been hoping that bacteriology would give some assistance. Latterly men had been satisfied to diagnose clinically, yet a lobar distribution is often found in lobular disease. He did not know any clinical condition that would enable one certainly to diagnose in all cases. Dr. Gossage's remarks were rather damping, as he told us that the bacteria might be the same in all cases.

Dr. TIRARD, in reply, said in answer to Dr. Taylor that with reference to capillary bronchitis there was a tendency to assume that all cases in young children were cases of bronchopneumonia, and the distinction between this and capillary bronchitis depended somewhat on whether the child died of capillary bronchitis before consolidation of the lung had time to occur.

As to toxin being eliminated and reabsorbed, this he never suggested, but rather that toxin that should have been eliminated had been retained, and that cerebral symptoms were most common in these cases. In his experience cerebral symptoms had not been most frequent in apical cases, but the physical signs developed in the usual site, at the right base. He was not certain that late appearance of physical signs could be accounted for by the disease beginning deep in the lungs. He hoped our power of detecting pneumonia was better than this theory suggested.

On the contagion question, he was interested to hear that Dr. Taylor's case of a small family epidemic had occurred before the recognition of influenza as an independent disease. He suspected that many epidemics of pneumonia were really epidemics of influenza, in which pneumonia was a prominent symptom.

Dr. JOHN THOMSON and Dr. A. LOGAN TURNER read a paper **On the Causation of the Congenital Stridor of Infants.** (See PEDIATRICS, 1901, xi., 1.

Dr. McBRIDE (Edinburgh) said he had seen several cases of the kind referred to, including some of Dr. Thomson's. He thought it was difficult on Dr. Thomson's theory to explain the absence of cyanosis. He thought experiments on the dead larynx were fallacious, because during life the abductor tonus kept the cords in the respiratory position. Then how can the respiratory croak be accounted for if so much importance attaches to flaccid arytenoids and folds?

He could not agree that there was a paralytic element. The stridor is more or less constant. He still adhered to the theory which he had held for many years. Victor Horsley had shown the existence of an adductor center. He did not doubt that irritation of this was the cause of laryngismus stridulus, and in Dr. Thomson's cases such irritation might occur more constantly.

Dr. DUNDAS GRANT thought that different elements came into play. In one infant with continuous stridor, even under chloroform the epiglottis was distinctly drawn down. When raised by a hook the stridor disappeared. In another case the aryepiglottic folds were so flaccid that they were drawn in.

Dr. LACK thought it was absolutely impossible to have a spasm of such a constant nature. The spasm always starts within a few days of birth. He would not place reliance on post-mortem examination. We can see the larynx during life and collapse of the superior laryngeal aperture.

Dr. TILLEY agreed with the conclusions which Drs. Lack and Sutherland had published, that there was congenital weakness allowing of collapse of the superior laryngeal aperture. In one case of a very weak and rachitic child possibly the great weakness allowed collapse to take place easily. Adenoids and reflex irritation appear to have nothing to do with what is apparently a mechanical condition.

Dr. THOMSON, in reply, said he quite recognized the fallacy of post-mortem experiments, but he thought it proved

that the change in conformation so caused was the same as that found in cases of congenital stridor.

As to irritation of the adductor center, there are probably higher centers which control the adductor and other respiratory muscles, and his theory was that this coordinating mechanism was somewhat defective. He differed from Drs. Lack and Sutherland in believing that there was not a congenital malformation, but a functional defect which ultimately produced the anatomical changes such as Drs. Lack and Sutherland described.

Dr. LOGAN TURNER said the cerebral defect was congenital, the laryngeal acquired. We see changes in the larynx, but how can we tell that these are congenital? The functional change must be taken in conjunction with the anatomical.

Dr. W. SOLTAN FENWICK read a paper on **Hypertrophy and Dilatation of the Colon in Infancy**. This condition is very rare, the writer having been able to find only twelve cases described in detail, and in only one of these was the patient less than 3 years old. The patient, whose history he reports, was a boy aged 1 year and 5 months, who was admitted to his hospital suffering from constipation and swelling of the abdomen. The constipation began a few weeks after its birth and gradually increased. At the age of 9 months the abdomen began to increase in size; at first this distension was intermittent, and was relieved by evacuation of the bowels, but later it became constant. The movements of the intestines became visible through the abdominal walls, and loud borborygmi became audible. On examination the child was found to have marked evidences of rickets, and the abdomen was found to have marked evidences of rickets, and the abdomen was found to be enormously distended, especially above the umbilicus, where the girth was 27 inches. No ascites, nor tumor, was observed on palpation, but if the peristaltic movements were observed, it was found that the prominence of the abdomen was due to an enlargement of a single arm of intestine stretching across the abdomen from right to left. The rectum was found to be voluminous.

Castor oil was administered and a quantity of liquid feces was passed. The diagnosis of idiopathic dilatation of the

colon, sigmoid and rectum was made. The child remained at the hospital and was treated with cascara with the effect of relieving the constipation. About two weeks after admission the temperature began to rise, and the child died five days later. On autopsy the belly seemed to contain three pieces of distended intestine. Its right half was occupied by the transverse colon, which passed from the right iliac fossa obliquely upward and to the left toward the hypochondrium, filling up the epigastrium and giving rise to the protuberance there observed during life. The left half of the abdomen contained two sacs which lay side by



side in its long axis from above the level of the navel to the brim of the pelvis. Subsequent examination showed that this latter appearance was due to the enormous dilatation of the sigmoid flexure, while the pelvis was completely filled by the distended rectum. The mucous membrane on the posterior surface of the descending colon presented a curious, worm-eaten

appearance, owing to the existence of a large number of irregular ulcers, separated from one another by tracts of thickened tissue. At one spot the ulceration extended through the coats of the gut to the peritoneum. In speaking of the treatment of these cases the writer says that they should be recognized as soon as possible, for the result without early treatment is invariably fatal. If fissure of the anus or spasmodic contraction of the sphincter be present, these must be removed as soon as possible. The constant employment of large enemata tends to aggravate the complaint and therefore should be abandoned in favor of suitable aperients and glycerine sup-



positories, combined with gentle massage along the line of the colon and the application of a well-fitting belt.

If signs of hypertrophy of the bowel are already present these measures are practically valueless, and the only hope of a cure lies in surgical interference. In the case recorded by Osler, the distended sigmoid was opened with great relief

while Treves has successfully excised the descending colon and the rectum. With regard to the question of colotomy, it should be remembered that the descending colon is usually affected with extensive ulceration; while not infrequently the transverse or ascending portions of the gut are as much dilated as the sigmoid. An opening made into the bowel on the left side is consequently apt to prove too low down. In all cases of doubt, therefore, the colotomy should be performed upon the right side. After the general health has been restored, the question of excision of the bowel may be considered, but, at the present time, too little is known about the after-effects of the radical operation to allow of its being lightly undertaken.

THE OVERLYING OF INFANTS.

We learn from the *Lancet* for September 15th that a woman has been committed for trial at the Central Criminal Court in London for causing the death of her infant by overlying it. At first this may seem unjust, but when it was shown that the woman had already killed two previous infants by overlying on them it must be granted that there were good grounds for suspicion of criminal intent. The practice of taking young infants to sleep in the same bed with grown people is injurious on all counts; and the ease with which a practice can be used as a means of infanticide renders it all the more to be discountenanced. Still, it would not be feasible to make a law forbidding it, for among the poorer classes there are many cases in which it is the only available measure, more's the pity, and even if it were made illegal, the law could not be enforced generally, for the offence would hardly ever be known, save when some catastrophe happened, in which latter case it would in any event, be a subject for judicial inquiry. The most that can be done is to make every case of overlying, the matter for a most searching investigation, coupled with a severe official censure of the practice, even when the accident is shown to be clearly unintentional.—*N. Y. Medical Journal.*

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
under the direction of George Alexander Saxe, M.D.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, August-September, 1900. (Continued).

III. (Third question). Contagion and Prophylaxis of Infantile Tuberculosis.

Dr. A. D'ESPINE, Genève. Contagion.—1. Infantile tuberculosis is an infectious disease acquired by contagion. The cases of hereditary tuberculosis due to transmission of the bacillus through the placental circulation are to be classed separately and are very rare. 2. The source of the infection in the great majority of cases is to be sought in the sputum of tuberculous individuals (adults), and the children are infected almost always by inhalation. 3. A second source of infection is the raw milk of tuberculous cows, more rarely of tuberculous goats, principally when these are affected with mammary tuberculosis. Infection by ingestion plays a more important role in infants during the first months of life and is less frequent in later part of childhood, and still less frequent in adults. Its frequency has been exaggerated, however, as the bronchial glands are the first organs affected in the majority of cases. 4. In infants kisses of phthisical parents or attendants may be the mode of infection; in these cases the infection may produce extensive lesions of the lungs, and the rarity of tuberculosis on early infancy is not due to the fact that young infants are less susceptible, but to the fact that they are less frequently exposed to infection. 5. In older children between the ages of two to five years tuberculosis is much more frequent, and the bronchial glands are usually attacked first. This frequency is explained by the fact that children at this age have a tendency to put everything into their mouths, especially their fingers. They play with sand and earth and are thus very often exposed to infection. 6. The frequency of tuberculosis diminishes from five years until the age of puberty. The danger of infection at school has been exaggerated, but is a real danger nevertheless. Infection may take place when the teacher is affected with "open" tuberculosis. 7. Inoculation of tuberculous bacilli through the skin is very rare, but in children it is more frequent than in adults, as evidenced by the frequent appearance of lupus before the fifteenth year. The mode of infection in surgical tuberculosis is as yet but imperfectly known, but it is probable that affection of the throat, carious teeth, etc., may be the avenues of entrance in tuberculous adenitis. 8. Heredity plays an uncontestedly prominent role in tuberculosis, and therefore the prophylactic measures apply especially to children of tuberculous parents.

Prophylaxis.—A To Prevent Infection. 1. Nothing but boiled milk, or milk from cows tested by the tuberculin test should be given to infants. 2. Wet-nurses and other attendants should be free from tuberculosis. 3. If the mother is tuberculous it is necessary to bring the child up with a wet-nurse and to avoid, as far as possible, all dangerous contact with the mother. 4. In a tuberculous family the general rules laid down by the Academy of Medicine must be observed, and especially the use of special receptacles for the sputum, the prohibition of sweeping the rooms and the substitution of washing all surfaces with some antiseptic solution. 5. No person who is affected with tuberculosis is to be allowed to become a teacher, and tuberculous children must be removed from the public schools.

B. To diminish the susceptibility of the infant to tuberculosis.—1. Establish rural asylums for the poor children of the large cities who have weak constitutions or are convalescent from acute disease. 2. To promote the vacation colony idea. 3. To send children who show the first manifestations of tuberculosis into sanatoria at the seashore or in the mountains.

Dr. HUTINEL, Paris. Heredity in Tuberculosis. Tuberculosis may be inherited by direct transmission of the germs, by transmission of hereditary disposition to the disease, and by the transmission of hereditary weakness or deformity. Whether true hereditary tuberculosis, i.e., as a result of transmission of the germs from parent to offspring really exists, is still problematic. It is possible, however, that if the mother is very severely affected, there may be a placental lesion which serves as a source of infection to the fetus in utero. Occasionally cases of congenital tuberculosis are seen in infants that are otherwise perfectly normal. That direct transmission does not play a role of any importance in hereditary tuberculosis, is demonstrated by the fact that the offspring of females affected with tuberculosis are rarely tuberculous if they are born alive, and by the fact that no special resistance can be attributed to the young organism against tuberculous infection, and finally by the fact that the pathology of tuberculosis in infants is in favor of infection post-partum. Tuberculosis in the ancestors, however, almost always influences the physical development of the offspring, and these influences may or may not be included in the conception of predisposition. As regards the latter it is well known that tuberculosis is more frequent among children of tuberculous parents, probably on account of the diminished resistance of such organisms to tuberculous infection. On the other hand, in some cases there seems to be a sort of attenuation of the infection, as though the patients were partly immune to tuberculosis. This may be explained by the phenomenon of mixed heredity, in other words, by the fact that on one side of the family the infant is protected by healthy parentage, on the other predisposed by tuberculous ancestry. The prophylaxis of infantile tuberculosis therefore is chiefly centered in the prevention of infection in the family of the patient. A careful clinical examination will reveal latent foci in children, and an early diagnosis will help to secure an effective therapy. Prematurely born and still-born children of

tuberculous parents should be studied with reference to the manifestations of hereditary predisposition to tuberculosis.

Dr. ANDRE MOUSSOUS, Bordeaux. Clinical Forms of Tuberculosis of Early Infancy.—The writer divides the clinical types of tuberculosis in infants into two groups—the acute generalized tuberculosis and the chronic. The first has all the characteristics of an acute infection, the second of a chronic cachexia. The diagnosis is difficult, because the symptoms upon which we rely in adults are of no use in infants. The enlargements of the lymphnodes throughout the body is not a pathognomic sign, as has been generally stated. The acute form must be differentiated from gastroenteritis, from typhoid fever (a disease which assumes a peculiar type in nurslings), and the second form must be distinguished from athrepsia, from gastrointestinal and syphilitic cachexia, from malarial cachexia, from pyogenic cachexia, and from anemia with enlarged spleen. In case of doubt we may use the tuberculin test or the artificial serum test, according to Sirot's method, but the advantages and disadvantages of these procedures are still sub judice. A new method seems to be promising good results, and that is the tuberculous serum reaction, discovered recently by Arloing and Courmont.

Dr. H. RICHARDIERE, Paris. Clinical Forms of Tuberculosis in Early Infancy.—In children tuberculosis is almost always generalized, or if localized at first it spreads to the various organs of the body at the acme of the disease. The cause of this tendency to generalize may be traced to the importance of the lymphatic system in the young, by the inability of the infantile tissues to resist the invasion of the germs of tuberculosis. The clinical forms of tuberculosis in infancy may be classified as follows:

1.—General Tuberculosis Without Special Localization and with an Acute Course. These include cases that run like a typhoid infection and that show no lesions at autopsy; in other words, cases in which there is an infection with a virulent form of tubercle bacilli.

2.—Localized Acute Tuberculosis (in the bronchi and lungs). This may be subdivided into (a) bronchial form; (b) asthmatic or suffocative form; (c) broncho-pneumonic form; (d) sclero-pneumonic form; (e) pleuritic form.

3.—Chronic Infantile Tuberculosis. The only safe diagnostic procedure is the examination of the sputum for tubercle bacilli. Other methods may be of some use but are not of absolute value.

[Thirteenth International Medical Congress, Section on Diseases of Children, Paris, 1900. Fourth Question: Acute Non-Tuberculous Meningitis].

1. Dr. G. MYA, Florence, said that the great majority of all cases of meningitis were due to the meningococcus intracellularis of Weichselbaum. This germ produces two distinct clinical types of meningitis. The first of these is acute or subacute in character, and corresponds in its

clinical features to epidemic cerebrospinal meningitis. This type is usually fatal, but it may merge into the second variety. This form is subacute, and sometimes lasts for several months. The tetaniform symptoms predominate, while the sensorium is but little affected, and the fever not very high. In this type the exudate is less abundant, more serous, and contains fewer germs than in the preceding form. The patients may recover, or may become hydrocephalic, or they may die of a secondary affection, or of an acute exacerbation of the inflammation. The germ which causes meningitis in children with the next greatest frequency is *diplococcus lanceolatus capsulatus*. The clinical type of meningitis which this germ produces is usually acute and fatal, and has a very uncertain polymorphous symptomatology. It is well to doubt the results of lumbar puncture in these cases, as the lumbar exudate is often serous, while that in the cranium is fibrinopurulent. This type of meningitis is often preceded or accompanied by pneumonia, otitis, or other localized inflammation. The forms of meningitis due to the *streptococcus pyogenes* are observed more rarely than the preceding types. They are usually secondary to some septic process. The form due to the colon bacillus, the typhoid bacillus and other germs are rare in children above the first years of life, and do not present a characteristic symptomatology. The non-bacterial types of meningitis are variously named acute hydrocephalus, serous meningitis, etc. The writer prefers the first name to the designation non-bacterial meningitis. These cases often accompany other infectious diseases and the process is not characterized by inflammation as the other types. Finally there is a group of meningeal inflammations that are undoubtedly caused by toxic influences. In these the toxins are either of autotoxic origin or they are the product of bacteria.

2. Dr. NETTER, Paris.—In addition to tuberculous meningitis there are types of this malady which admit of a better prognosis and of a more rational treatment. The fact that nervous symptoms analogous to those of meningitis may be present in otitis media without a complication on the part of the meninges must not be forgotten. In some infectious diseases of childhood there may be cerebral symptoms without meningitis, or the meningeal affection merely a congestion or a serous inflammation. There is no absolute demarkation between the sporadic and the epidemic varieties of meningitis. Two important signs have been recently suggested as aids in the diagnosis of meningitis. Kernig's sign, which consists in the impossibility of extending the knees completely when the patients sit down, is almost never absent in non-tuberculous meningitis, but is also present in many cases of tuberculous meningitis. Quincke's lumbar puncture is a valuable adjunct to diagnosis. Aufrecht's hot baths constitute an excellent means of treatment in meningitis, and in suppurative cases repeated lumbar punctures may be of service.

3. Dr. M. CONCETTI, Rome.—There is a non-bacterial form of meningitis which may be called acute serous meningitis. It is characterized by an acute onset, often in the course of a gastrointestinal infection, or of a pneumonia, or of an acute infectious disease, and by a serous exudate

abundant in character, but totally lacking any micro-organisms. These forms of meningitis are of toxic origin. Lumbar puncture constitutes a valuable prognostic, diagnostic and therapeutic measure. The procedure must, however, be begun early and practised daily until it is no longer necessary. By means of the lumbar puncture he has been able to avoid those disagreeable complications that are seen in prolonged cases of meningitis, e.g., paralyses, deafness, etc. In tuberculous meningitis and in chronic hydrocephalus, cerebral tumors, etc., the lumbar puncture proved of no avail. The action of specific antitoxic serums against the various germs that may cause meningitis, while it cannot be denied that it is to a certain extent of benefit, cannot be stated to be antidotal. It seems to him that the injection of cerebrospinal fluid from a child that had recently recovered from the disease would offer more chances for success, and that it is undoubtedly worthy of a trial in the future.

DISCUSSION.

Dr. HENRY KOPLIK, New York, said that in his opinion, based upon an epidemic observed in New York, there is no difference between the sporadic and the epidemic cases of cerebrospinal meningitis. He distinguishes three types of cerebrospinal meningitis, namely:

1. Acute cases, characterized by a sudden onset, high fever, violent delirium, rigidity, and convulsions.

2. Cases characterized by coma and absence of convulsions. In both these types lumbar puncture always gives a distinctly purulent exudate.

3. Subacute cases marked by attenuation of all symptoms.

Here lumbar puncture often gives a serous or seropurulent exudate. In tuberculous meningitis, paralyses of the limbs are more frequent than in the other varieties, and Koplik regards this fact as a help in differential diagnosis. He also emphasized the value of lumbar puncture as a curative measure and said that early puncture, even in tuberculous cases, was capable of doing good. In cerebrospinal meningitis it is a curative measure, if applied often enough.

Dr. Marfan asked Dr. Netter what he thought of the frequency of Kernig's sign in tuberculous meningitis.

Dr. Netter replied that he thought this sign is very frequently present in tuberculous cases, but it is more often absent than in cerebrospinal meningitis. In 50 cases he has seen it 29 times in tuberculous meningitis. In 30 cases he saw it 20 times in cerebrospinal meningitis, and in 9 cases 9 times in secondary meningitis.

Dr. MARFAN thought that Kernig's sign is much less frequent in tuberculous meningitis. In 15 cases he did not see it once. He reminded the audience of the theory of Dieulafoy as to the spinal origin of this sign, a theory which is somewhat in discord with the relative frequency of spinal lesions in tuberculous meningitis.

Dr. NETTER agreed with the preceding speaker in almost every point and differed only as to the number of cases in which the sign is present in the tuberculous variety. As to the question of pathogenesis of the sign, it is impossible to offer more than hypotheses at present.

PEDIATRIA, September, 1900.

1. **Concerning Ulcers in the Corners of the Mouth of Children.**—By Dr. A. SOLARO. The writer discusses the etiology and clinical features of perleche, and in speaking of the treatment of this affection, reminds us that in many cases it heals spontaneously. The laity are accustomed to use applications of alum to the sores. Comby recommends the application of tincture of iodine on pledgets of cotton, and Siegert also advises this treatment, or the application of a solution of nitrate of silver (1 per cent.). Epstein recommends, in persistent cases, the use of little pieces of salicylic plaster on mull, or of drying antiseptic powders, such as xeroform, orthoform, dermatol, etc.

2. **A Case of Chronic Rheumatic Peritonitis.** By Dr. GALVAGNO.—The patient was a girl, aged 8 years, whose illness had been of two years duration when she was admitted. The first symptom was an eczematous eruption on the face and on the other portions of the body. This eruption came on at intervals and then disappeared, and returned again. About two years ago the mother noticed that the child complained of pains in the abdomen, of headache, of afternoon feverishness, and found that the child's abdomen was considerably enlarged. The fever and pains passed off but the swelling remained and grew more marked. On examination, it was found that the liver and spleen were normal, but that the abdomen contained a certain amount of fluid. The urine showed no deviations from the normal. The writer excluded the presence of an ascites due to disease of the liver, or of the kidneys, or of the heart, and the possibility of tuberculous peritonitis. The patient's mother refused permission to tap the abdomen in order to obtain some fluid for examination, and also refused permission to subject the child to the tuberculin test. The absence of other tuberculous foci, the apparent serous character of the exudate, the absence of cachexia, profuse perspiration, etc., however pointed against the presence of tuberculous peritonitis. The possibility of a tumor of the peritoneum was also excluded by the absence of a palpable tumor, the absence of pain, cachexia, and the age of the patient. There remained rheumatic peritonitis or the so-called idiopathic chronic peritonitis of Trousseau, which Galvagni showed to be of rheumatic origin. The writer agreed with Galvagni, and presented this case as one of rheumatic peritonitis to his students at the University of Catania.

3. **A Case of Very Severe Erysipelas in a Child of Sixteen Months.**—Treated with Hypodermic Injections of Carbolic Acid at a Distance from the Focus of Infection.—By Dr. NICOLA FEDELE.—The treatment consisted of injections of carbolic acid, the solution being composed of 2 grams of carbolic acid, 4 grams of alcohol, and distilled water enough to make 100 cc. The region selected for these injections was the nates. On the first day ten injections were given at intervals of one hour between each. During the eight days of treatment the patient received thirty-eight injections, containing a total of 76 cc. of carbolic acid. The erysipelatos eruption began to fade on the third day, the temperature began to fall on the fourth day of the treatment.

KINDERARZT, September, 1900.

1. **A Contribution to Our Knowledge of the Shrunken Kidney (Schrumpfniere).** By Dr. HERMAN KLAGES.—Acute attacks of nephritis are often overlooked in children, especially in the lower classes of the population. The frequency of chronic nephritis in childhood is greater than is generally supposed. Weigert has shown that primary interstitial nephritis may be congenital, and Buhl has seen it in a child of one and a half years, while Oppenheim collected 22 cases in children of four to thirteen years. It is important to differentiate the cases according to the etiology in each instance, as the therapy and prophylaxis vary. It is important to distinguish the primary cases from the secondary, but it is not always possible to do this.

2. **Rachitol in Rabbitis.** By Dr. FRIEDMANN.—As the result of his experience with rachitol in 35 cases of rickets, the writer states that he was able to note remarkably prompt and efficient action in seven cases. He believes that rachitol, unlike many newer remedies, has come to stay. This substance is, as we understand it, nothing but suprarenal extract in tablet form, prepared by a German chemical house especially for use in rickets. The writer does not give the dose nor the method of using, but refers us to the labels on the vials of tablets.

3. **Sana as a Substitute for Cod Liver Oil.** By Dr. A. KOPPEN.—The writer comments upon the recommendation of Fuerst, in an article which appeared in a previous number of the *Kinderarzt*, that sana be used as a substitute for cod liver oil, and calls attention to the fact that Lydia Rabinovitch has found tubercle bacilli in samples of this substance. Oleomargarine and butter were said to be useless as substitutes for cod liver oil on account of the possibility of containing tubercle bacilli. The present writer emphasizes the necessity of assuring ourselves that a vegetable or animal substitute for cod liver oil does not contain tubercle bacilli before prescribing it.

CONSTIPATION.

The treatment of chronic constipation in infants and young children is attended with many difficulties, and may not be dismissed with the prescription of a purgative or a few doses of laxative medicine, but requires most careful and painstaking consideration. It may not be inapt to remark here that the difficulty may often be avoided by the systematic establishment of regular habits in infants soon after birth. Even infants only a few months old may very easily be taught to use a chamber or chair for their evacuations, if they are systematically trained to do so, much to their comfort as well as to that of those who may have their management. And it is just as important for older children to have a regular time for this function as it is for adults.—Dr. G. W. Cook, *American Journal of Obstetrics*.

PEDIATRICS

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ORIGINAL ARTICLES

ANALYSIS OF FIVE HUNDRED CASES OF LATERAL CURVATURE OF THE SPINE AND TREATMENT.

By CHISHOLM WILLIAMS, F.R.C.S., ED., ETC.

Surgeon Out-Patients City Orthopædic Hospital, E.C.

IN every one of the cases recorded there was distinct lateral curvature. In 18 cases, although the spinous processes were perfectly straight, there was evidence of rotation in the dorsal and lumbar regions. Cases of simple weak back are not included.

SEX.

The great majority were hospital patients as will be readily noticed in the sex, there being four females to one male.

But in private cases I record seven females to one male, the difference probably being due to the females in the latter position not having such freedom of action as their sisters in a lower grade of life. The greatest number of cases occur between the ages of sixteen and twenty, as will be seen by the following table:

AGE.

From 1 year to 6.....	33 cases.
“ 6 “ 10.....	66 “
“ 11 “ 15.....	121 “
“ 16 “ 20.....	175 “
over 21 ..	105 “

CAUSE.

I can always find out a cause for the condition but it may not be *the only* cause.

Heredity 121; rickets 92; general weakness associated with, as a rule, rapid growth or following specific fevers, 81; bad postural habits in youth, 111; occupations in adult life, 63; rheumatoid arthritis, 18; inequality in length of legs, 123; flat foot, 131; knock-knee, 46; infantile paralysis, 32; chest diseases, 13; old empyema, 4; defective sight, 13; adenoids, 23; torticollis, 1; one arm only, 1; amesial pelvis, 23, out of 113 tested.

Of the above, in some several causes could be traced: thus one girl, aged 18, had a history of mother, sister, and paternal aunt who had had lateral curvature. She had had rickets when about $2\frac{1}{2}$ years old and had well marked traces still left in the lower limbs. The left leg was $\frac{1}{4}$ inch short owing to greater curvature of the left femur; severe flat-foot on left side; she was short-sighted, had been a children's nurse at a *crèche* for three years, and was very anemic.

FORM.

The most common form was right dorsal convex and left lumbar convex (Fig. I), there being 257 out of the 500; 90 had right total convex curves; 84 had left dorsal convex and right lumbar convex curves; 64 had left total convex; 5 had triple curve, right upper, left middle, and right lower convex curves. I have had no case of triple curve the reverse of the above.

PAIN OR BACKACHE.

In 101 cases pain or backache was constant and in 82 the pain was variable.

PREVIOUS TREATMENT.

The greater number of the patients, i.e., 333, had received no previous treatment; 118 had used axillary crutched back supports with laced side plates (average price, 6 guineas), 4 spring supports; 5 cog-wheel plate apparatus; 13 corsets of various patterns; 24 poroplastic felt jackets; 3 plaster of paris jackets. On inquiry I found that these had been applied on the supposition of early caries. When taken off by me they presented well-marked lateral curvature. The Swedish movement cure had "moved" 19 with, from the parent's account,

disastrous results. It may be taken as a fact that no lateral curvature which is improving to the patient's parents' under-



FIG. I.—Case of moderately severe lateral curvature of spine. Right dorsal and left lumbar. Patient placed in best possible position; could only maintain it by great effort and for two minutes.

standing will want a "change of treatment," unless it be on the score of inordinate length of treatment and possibly expense. Twenty-six had been treated by "special exercises and postures" and were in a more or less degree, if I may use the expression, "muscle-bound," that is, the whole of the muscular system had been brought up to an equal stage of power so that the weak convexity muscles were strong and the strong concavity muscles were stronger than they had been at the start; the curves, therefore, were either stationary or worse, and much valuable time had been wasted, during which the resisting structures had become naturally more dense, necessitating much trouble and power to overcome. Prolonged recumbency for long periods combined with some form of instrumental treatment had produced the converse of the "special exercises and posture" treatment; that is, the convexity muscles were almost absent and the concavity muscles were not much better, while the ligamentous structures had remained in about the same condition. Only 7 of the cases were wearing shoulder-braces or straps, the so-called "stoop-cures," but from inquiries in 5 cases I was informed that there was no L.C. at the time so that it must have been developed after the use of the braces.

TREATMENT.

Putting aside those cases affected with short-leg or flat-foot, or some easily remedied cause, where the treatment by mechanical or other means would be sufficiently obvious, I can safely say that no five of these consecutive cases were treated alike from "start to finish." I had no case, of whatever degree of so-called osseous deformity, under the age of 25 years, in which I was not able to effect some amelioration. By this I mean not only a stronger (if weak) back but a more straight line of the vertebral bodies. It is reasonable to suppose that the inter-vertebral cartilages must become very "wedge-shaped" before the bodies are much affected, and if the pressure of the bodies on them can be relieved by any means the discs will become thicker, and the shortened ligaments longer, and the long lax ligaments shorter, and so help to cure.

Believing that direct general muscular exercises *alone* do positive harm to the great majority of cases, my treatment was directed to:

1. The patient's general condition; improved by means of fresh air, fresh food, and, as a rule, fresh clothing, made to allow of, more particularly, chest development.

Medicinally, by means of the hypophosphites, cod-liver oil, and bland preparations of iron, etc.

2. Getting the spinal column straighter by means of:— manual pressure, mechanical pressure, Barwell's rachylisis, Barwell's lateral sling, and Volkmann's sloping seat; weight pressure.

3. Keeping up the improved position by means of the apparatus prescribed at the City Orthopædic Hospital and devised by the late E. T. Chance. It is an adaptable metal splint and acts chiefly as a spinal extension. (Fig. II).

Between the shoulders is a metal plate, having attached to it two straps which pass through the axillæ and brace back the shoulders; it is joined to a perpendicular slotted rod which passes downward to a crescent-shaped metal band (pelvic girdle) joined in front by a strap and situated on a level between the crest of the ilium and great trochanter; over the convexity of each curve a plate is accurately adjusted by means of short metal arms which connect the plates to the perpendicular rod. A broad abdominal belt completes the splint. All parts in connection with the skin are thickly padded. Accurate adjustment is made by means of wrenches and a key for the nuts. The curved plates can be moved up and down and laterally and then fixed by the key whilst greater nicety of position can be obtained by wrenching the short arms or the rod. At the first sitting the splint must fit perfectly and from time to time be altered as improvement progresses, readjusted and the better position kept up. It does not fix the column as in a vice, but always allows of a slight amount of muscular action which is sufficient to bring about a lessening of the curves in the great majority of cases, more especially when combined with other means. The patient should be directed to "get away from the plates," as every time she did so, she is in a better position and when she drops back cannot resume a more faulty position than the splint will allow; when this becomes somewhat habitual the splint must be again readjusted, and so on, till the cure is complete. It should be worn, as a rule, at all times— night and day, and only taken off for douching and exercises. In extremely severe cases, where cure is out of the question,

the splint is of the greatest comfort to the patient and prevents any increase of the deformity. Adaptability, lightness,

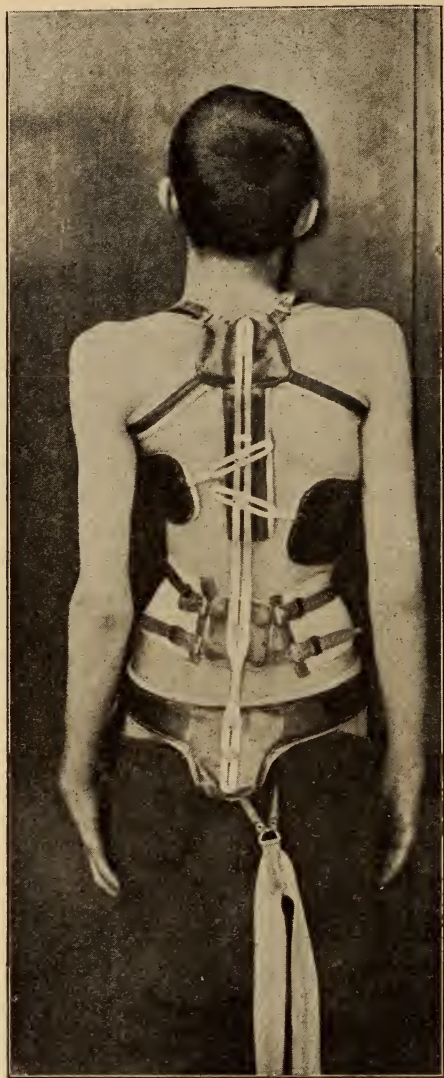


*FIG. II.—Splint for lateral curvature of spine showing the much improved position immediately on fixing it. Note the production of a "wais" triangle on the right side. Photograph taken a few minutes after Fig. I. Other side plates are sometimes necessary.

cleanliness, durability, and great efficiency are its chief merits.

Under the age of 5 years a leather or guttapercha splint, suitably padded, is sufficient to overcome the curves.

4. Special exercises were ordered for each weak muscle or group of muscles until the spine was straight then general muscular exercises were given to assist in keeping it in position.

5. Other aids were massage, galvanism, and rubber exercisers.

The ease with which any case of lateral curvature of spine is treated depends on the following:

1. Intelligence and willingness on the part of the patient.
2. The care and help of parents or friends.
3. The assistance of the surgeon.

PREVENTIVE MEDICINE.

The results of general application of sanitary measures are that the general mortality has, during the last fifty years, been reduced one-half. The individual longevity of man has increased more than three years, that of women three and a half years. The mortality of the British troops is only two-fifths of what it was at the time of the Crimean War, among those in the East Indies one-third, and among those in the West Indies one-tenth. Dr. Parker, of London, has estimated that small-pox has diminished 95 per cent.; deaths from fevers generally have declined 82 per cent., deaths from typhus fever 95 per cent., deaths from enteric fever 60 per cent., deaths from scarlet fever 81 per cent., deaths from diphtheria 59 per cent., and deaths from phthisis 46 per cent. The mortality from surgical operations, has, through the teaching of Lord Lister, been reduced 20 per cent., the surgeon no longer dreading septicemia, gangrene, etc., when in former times almost every other amputation resulted in death. It is estimated that the operation for ovariectomy has added 40,000 years of useful life to women in Great Britain, with a like proportion for other countries.—Dr. WILLIAM BAYARD, *Montreal Medical Journal*.

AMBIDEXTERITY: A PLEA FOR ITS GENERAL ADOPTION.*

By E. NOBLE SMITH, F.R.C.S., Edin.,

Senior Surgeon to the City Orthopædic Hospital, London.

WE occasionally hear it stated as a remarkable fact that someone is able to use his left hand equally well with his right. For instance, the special correspondent of the *Pall Mall Gazette*, writing from Mafeking (February 3d) referred to General Baden-Powell writing his diary with his left hand. "For," adds the correspondent, "with his wonderful foresight he has recognized that in pursuing his trade he may lose his right, and he does not want to be left in the lurch." I believe that General Baden-Powell is ambidextrous in everything.

We all know how valuable ambidexterity is in every kind of manual work, but although a certain number of men of various occupations have learned to use the left hand fairly well, there is a total absence in this country of a systematic teaching of ambidexterity.

It must be obvious to anyone giving the subject consideration, that enormous benefits would be gained in every manual undertaking by bringing the two hands equally into use.

In America, the Public Education Board of Philadelphia has adopted the system of teaching ambidexterity as devised by Prof. L. Tadd, and about 2,000 girls and boys attend regularly to undergo this course of training. In Great Britain, however, nothing practical has been done in this direction.

Some attempt is, however, now being made to introduce ambidexterity into English schools, and I would strongly urge all those interested in tuition not to allow prejudices or old traditions to stand in the way of so important a reform as this will probably prove to be.

One argument in favor of encouraging the use of the right hand to the detriment of the left is the popular idea that right-handedness is a natural acquirement.

* Reprinted from advance sheets furnished by courtesy of the *British Medical Journal*.

The late Sir John Struthers and others endeavored to show that a natural tendency to use the right side of the body in preference to the left is due to the greater weight of the contents of the chest and abdomen on the right side. Struthers found from experiments in the dissecting room and post-mortem room that the viscera gave a preponderance of weight to the right side of $22\frac{3}{4}$ ounces (presumably in the adult), and he considered that we thus have a natural physical cause:

"The greater weight on the right side leads to resting more on the right leg, and from this pillar of support we naturally use the right upper limb preferentially."

The same writer continues:

"On the hypothesis of the unity or origin the explanation of right-handedness is easy. One hand would naturally be fixed upon; the young would be trained to use the same hand, and the influence of that on the left hemisphere of the brain would ere long give an hereditary or "instinctive" tendency to prefer the right hand; but from the beginning there has been the natural physical cause of visceral preponderance on the right side."

That people who happen to have transposition of the viscera, in which case the heavier organs would be on the left, are not left-handed, does not necessarily upset this theory, because it is contended that hereditary influence will remain, but no one has satisfactorily explained the occasional occurrence of "instinctive and inveterate tendency to left-handedness, of which Sir Daniel Wilson was an example."

Another theory of the cause of a preferential use of the right hand attributes it to a difference in the two sides of the brain, and there seems more evidence in favor of such a view. One fact alone may be mentioned here—it is that the center of speech is situated in the left lobe, and this doubtless influences right-handedness.

Professor Struthers remarked that:

"The preferential use of the right hand does not, according to my observation, show itself in very young children, but only after they have assumed the erect posture and begun active exertion. Nor does it follow that the part heredity plays will operate from the very beginning. Heredities have their periods in showing themselves. The visceral preponderance hypothesis applies to a much less degree in the quadruped, but

leather merchants tell us that the right side of the hide is known as the "lying" side. . . . In regard to the use of our feet, relatively there is not much difference, but we use the right preferentially in vigorous acts."

This observer further referred to the right lower limb becoming the stronger from being the chief pillar of support under visceral preponderance, and to the consequent greater development of the left side of the brain. He thought that most persons who have never had an injury to either lower limb will find that "the sole of the right shoe wears before that of the left."

Although right-handedness is probably a natural acquirement, I doubt if it is as strongly implanted in our nature as some observers believe. A right-handed tendency is not universal; it is stated that although there is no race of people who are entirely left-handed, yet the natives of the Punjab approach very closely to this condition, for 70 per cent. of them are said to use the left hand by preference. A similar preference is found among the majority of Hottentots and Bushmen in South Africa.

Most careful observers of children agree with Sir John Struthers, that the very young are often inclined to use the left hand as much as the right, but the teaching of mothers and nurses is always to encourage them to prefer the right. How many children will give the left hand to be shaken, but are promptly corrected to substitute the right? And so it is all through life, there seems to be a great dislike, amounting almost to a horror, against the use of the left hand for any important purpose.

Mr. J. Jackson contends that of every hundred persons born, about three will be strongly left-handed, seventeen emphatically right-handed, and eighty will have "no particular bias in one direction or the other. All these persons can, he thinks, be so educated that they may use their two hands almost equally well.

A member of the Association tells me that during his infancy he was so markedly left-handed that attempts were made to correct (?) him. The left hand was bound to his side more or less for a few years. He now uses the two hands almost equally well, but has become used to prefer the right slightly.

Preference to use the right side also occurs in respect to

the legs. If we walk in the dark we generally walk in a circle towards the left, because the right side predominates and is brought forwards more than the left. Where double doors exist in any place used by the public I have noticed that the left door is used most on entering, because people are inclined to turn to the left.

As regards animals, I have already referred to their habit of lying on the right side. Flies, I think, must be left-handed or left-sided, if I may judge by their tendency (in my own experience when I am cycling) to get into the left eye. It would seem that in meeting a rapidly-moving body they try to avoid it by turning to the right.

A great deal might be said about the advantages of ambidexterity, but I now wish to draw attention to some of the disadvantages of the preponderating use of the right side of the body, especially the right arm. As the nerves that supply the right side of the body emanate from the left side of the brain, and vice versa, it follows that the excessive use of the right side of this nerve centre is left undeveloped, while the left side of the brain is overworked. As a proof that it is better for individuals to have both sides of the brain worked equally, it has been shown by Professor Tadd in America that children who are taught to use the left hand equally with the right become more facile with the right itself, or, in other words, the use of the left hand improves the action of the right to a greater degree than seems to occur when the right alone is used. This is markedly the case in drawing and writing. Moreover, these children are said to become relatively sharper and more intelligent than others.

The subject to which I have paid most attention in this respect has been the production of deformity from the excessive one-sided use of the body. The enormous number of deformed spines which exist may be gauged by the statistics of the City Orthopædic Hospital in Hatton Garden, where, during the last year of which I have a report, 603 cases of lateral curvature were admitted as new patients, that is to say, at the rate of about two every day, not including Sundays. A large number of these cases had become very severe deformities. There are doubtless many causes of lateral curvature of the spine, but it is generally admitted that unevenness of posture has a great influence in this respect, and the preponderating

use of the right side necessarily bears upon the spine unequally. It is a further remarkable fact that a large majority of these curvatures consist in a bending of the upper part of the spine to the right, exactly in the direction produced by the excessive use of the right arm.

The deforming influence of various trades is well-known. The compositor in a printing-house, for instance, is recognized by his high right shoulder. The custom of selecting the type with the right hand and setting it on the "stick" held in the left hand, brings about this deformity. Where the linotype machine is used it has done away with this particular influence, and the postures of the workers are consequently much improved, as they use both hands more equally. This is only one occupation among a great many which produce deformity of this kind.

In describing the various causes of lateral curvature certain postures are generally referred to as having a detrimental influence, but if we go further we shall find that nearly all these postures are the outcome of the preference for using the right arm and the right side of the body generally.

The following are some of the exciting influences of curvature of the spine:

Standing on one leg (the right leg being generally selected).

Postures in drawing and writing, and other occupations.

The use of various musical instruments, especially the violin.

Sitting for various purposes in limp postures without proper rest for the back, when the customary preponderating use of the right arm tends to make the individual rest with that arm protruded more forward than the left.

It may be urged in favor of ambidexterity that its introduction would improve the ability for all kinds of work, develop the two sides of the brain more equally, and remove a very potent cause of a very common and distressing deformity.

I have condensed this subject into as small a compass as possible, with the view of simply drawing attention to its importance, and have left for a future time the consideration of a great many arguments and facts bearing upon ambidexterity. Mr. John Jackson, the great advocate of upright handwriting

is, I understand, preparing an elaborate paper upon this method of teaching, and I feel sure that the subject as a whole will receive at his hands far more attention than I can pretend to have bestowed upon it.

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FIVE BOYS AT ONE BIRTH.

A remarkable birth is reported from Mary's Home, near Jefferson City, Mo., where Mrs. Henry Smith gave birth to five baby boys at one time. They are reported to be well and weigh a total of 30 pounds. Smith has been married less than seven years and is the father of sixteen children. Only one time has there been born a single baby. The others are two pair of twins, two pair of triplets, and the quintette.—*Philadelphia Med. Jour.*

EDITORIAL COMMENTS.

Dannemora as a Site for the
State Hospital for
Consumptives

It is with regret that we notice that Dannemora is being seriously considered as a site for the first State Hospital for the treatment of patients suffering from tuberculosis. We are opposed to this location not because it is unsuitable on account of climate or water supply or for any other reason than that there is located a state prison and an asylum for insane convicts. This may seem at first glance a trivial objection, but those of us who have worked among the poor of our own city know the deep-seated antipathy that exists among many of them to being sent to "the Island," simply because in their minds some stigma is attached to this locality on account of the proximity of the charitable institutions there to the penitentiary and work-house. Thus, for sentimental reasons, as it were, many had rather return to their poor homes and eke out existence as best they may than enter the excellent hospitals situated there. With such a state of things existing here now we cannot think Dannemora the happiest selection for the erection of the first hospital for the treatment of consumptives. We have recently received a letter from Dr. Alfred Meyer, who has given much time and thought to this subject, which tends to strengthen our opinion previously formed.

While admitting the suitability of the climate, soil, drainage, and water supply, he opposes the choice of this location for the same reason we do. He goes on to say:

"Let us not be blinded to the fact that the main arguments in favor of Dannemora are the gift of the land and the labor for the construction of the buildings. This is tempting bait; yet it is to be hoped that the trustees will not yield to it.

The natural and commendatory desire on the part of the prison officials to secure labor for their convicts should not lead the trustees to subordinate the interests of the consumptive poor to those of the convicts.

“This is to be only the second state hospital for incipient consumptives in this country, and upon its success may depend the fortunes of the whole movement in this and other states. Patients are to go there voluntarily, and much, perhaps all, depends on getting them there early; there ought to be no prejudice in their minds against the place and its associations; no risks should be taken in the choice of site that would entail hesitancy on the part of the patient. Furthermore, be it remembered that the incipient consumptive is not a helpless invalid easily controlled through his very helplessness, but well enough to assert his own individual prejudices.

“At some future time, when the movement in this state is no longer in its incipient stage and when the advantages of early sanitarium treatment of consumption have won their way into the hearts of our tenement-house population, the objections against Dannemora may weigh less in the balance, but for the present, at least, Dannemora ought to be eliminated from the list of available sides.”

It is with sorrow that we record the death on December 18th of Dr. J. Henry Fruitnight of this city. Dr. Fruitnight was born in New York City, November 9, 1851. He received the degree of Bachelor of Arts from the College of the City of New York in 1872, and graduated from Bellevue Hospital Medical College in 1875.

His tireless, conscientious devotion to his duty was a splendid example for those who had the honor of his acquaintance. In the profession generally, Dr. Fruitnight was well-known as a pediatrician. His numerous articles and monographs on pedi-

atric subjects obtained for him honored recognition both in America and Europe. He refused two professorships of diseases of children for fear that such work might take too much of the time he thought rightfully belonged to his patients. Besides being a member of the American Pediatric Society and many other medical societies he was a trustee of St. John's Guild from 1897 to 1889 and deacon and chairman of the Board of Deacons of the Central Presbyterian Church from 1880 to 1895.

CARE OF THE MOUTH.

Perhaps no part of the body is so often neglected as the mouth; especialle is this noticeable in the case of children. A mother, who will religiously bathe her child and keep its body sweet and clean, will often fail to clean its mouth. A new-born infant should have its mouth washed after each feeding; a soft cloth wet in a weak solution of boracic acid should be used for this purpose. If this were always done we should rarely find a case of infantile sore mouth.

After the teeth come and the mouth is large enough, a small, soft brush should be used; the teeth and mouth should be thoroughly cleansed at least twice daily.

In illness, where sordes and mucus accumulate rapidly, and where the tongue and lips are parched and stiff, attention is needed every hour; the mouth should be kept moist, and the same treatment carried out through the night as through the day. Boracic acid solution, listerine, lemon juice, glycerine, and distilled water are all refreshing and soften the tissues; where the lips are chapped or fissures appear, a lubricant of cold cream or sterilized vaseline should be applied. Where the gums are spongy or soft and bleed rapidly a few drops of tincture of myrrh added to pure water will help to harden them. Small squares of old linen or soft gauze should be used instead of a brush where one is ill or weak. These should be immediately burned after use.

Every part of the mouth should be cleansed; behind the wisdom teeth, the roof of the mouth, and under the tongue; lemon juice and water will remove the fur from a thickly coated tongue. Where the teeth are sensitive, the water used should be slightly warm,—*South California Practitioner*.



DR. J. HENRY FRUITNIGHT.

SOCIETY REPORTS

BRITISH MEDICAL ASSOCIATION.

Meeting at Ipswich.

SECTION: DISEASES OF CHILDREN.

Second Day, August 2, 1900.

The President, Dr. FREDERICK TAYLOR, in the Chair.

Discussion on **Lateral Curvature, Knock-knee, and Flat-foot**, opened by J. Jackson Clarke, F.R.C.S.

Mr. JACKSON CLARKE, in opening the discussion, said an important preliminary was to define the terms. The term lateral curvature signified the familiar type of spinal distortion, yet rotation without lateral displacement may occur, and he would prefer the term scoliosis for general surgical use. The term genu valgum need not be further defined. The term flat-foot was sometimes objected to but was useful, though pes valgus would be preferable for scientific use.

In the next place it was necessary to limit the scope of the debate, as a year would not suffice to consider all the points that might be raised, and only complete ignorance or perfect knowledge would be able to arrive at definite and dogmatic results. Only by limiting the study to habitual pressure deformities could the different conditions met with be properly compared and considered together.

Any attitude maintained too long, if not the mean attitude of the joints under consideration, is apt to lead to deformity, and if a mean attitude is not departed from sufficiently often a limitation of movement is apt to ensue.

Lateral curvature occurs most frequently in children from faulty attitudes during writing. Many people lay stress on the occurrence of a static scoliosis from tilting of the pelvis resulting from a shortening of one limb, but for one case of this kind he sees fifty due to faulty posture.

As to genu valgum, unilateral cases and cases with knock-knee on one side and bowed leg on the other, they were due to severe rickets, and therefore not under consideration.

Turning one's attention to flat-foot it was found that many writers were very much confused as to the movements of the foot. If the normal foot is placed on the ground and made to bear weight it is found that eversion can only take place by a rotation of the bones of the leg round an axis passing near the inner edge of the tibia.

The different stages of flat-foot may be described as follows :

1. The yielding of the foot to weight somewhat exceeds the normal; this is often spoken of as weak ankle.
2. Part or the whole of the deformity becomes persistent, but can be passively corrected.
3. The deformity becomes fixed and cannot be corrected without rupture of ligaments.
4. Then long deformity occurs and replacement cannot be brought about without fracture.

The factors in causation are posture, gravity, feebleness of muscular tone. But he would like to direct special attention to another question in connection with etiology, namely, the extent to which pathological factors were at work in the causation of pressure deformities. In his own experience there was always some pathological change behind these deformities. This, he thought, was often rickets, but rheumatoid arthritis or a tendency to such a condition was also of importance. If we find a lot of healthy children together in a family we find that they do not tend to develop these deformities. Their natural fidgetiness acts as a preventative. Schenck has shown that nearly all school children adopt a scoliotic attitude in the classroom, while a Danish observer found that not more than $1\frac{1}{3}$ per cent. became scoliotic, therefore the mere assumption of the attitude is not sufficient to account for the deformity.

He believed that *at the time of development* of the deformity evidence of rickets or of a rachitic tendency would be found. In the majority of children seen with these deformities adenoids were present or had been removed. In rickets there is a general tendency to enlargement of adenoid tissue and this may require surgical interference.

The question of diagnosis need not be dwelt upon. Early

diagnosis is very important. One sees cases not infrequently where the deformity had been overlooked until a severe degree of curvature was present. He had known a diagnosis of tumor made in a case of high dorsal curvature, the increased respiration being regarded as hysterical.

Preventative treatment included rational feeding, the avoidance of artificial foods, the use of milk unsterilized, or, if



FIG. I.



FIG. II.

Illustrating Mr. J. Jackson Clarke's paper

sterilized, with the addition to the dietary of some raw meat juice. Proper clothing is also an assistance. Such treatment is especially important if symptoms have actually begun. Treatment by means of exercises should in all cases be under medical supervision. Free respiration was especially important, and any obstruction to respiration must be removed. Forced expiration, sometimes ordered, should never be permitted. It merely tends to cause emphysema.

Exercises must be specially designed for each case; the

patient can soon be taught how to carry them out. They must be kept at regularly under occasional supervision for about two years; even simple exercises, such as the tip-toe exercise, may do harm if supervision is neglected.

Rest on a firm couch or bed might seem likely to be useful, but the tendency to deformity may exist for years and children rapidly lose tone if kept in bed for even a few days. Yet some surgeons still recommend keeping a child in bed for two years on account of the supposed danger of pelvic deformity, but this danger is really even greater if the child is debarred from fresh air and exercise. Treatment should keep children neither for education nor exercise.

Mechanical treatment has done much harm, especially when managed by instrument makers, yet it is certainly useful in suitable cases. (Photographs were shown illustrating types of apparatus recommended).

Operative treatment included forcible manipulation, wrenching, and osteotomy. All these are useful in suitable cases, but only experience and knowledge can guide the selection of cases. Macewen's operation for genu valgum is excellent, but thousands of children have been operated on unnecessarily when splints would have been sufficient treatment. In other cases the operation had failed to relieve the deformity.

A lateral curvature which has settled down and been compensated for by nature should not be unnecessarily burdened with instruments.

Routine measures are the bane of practice in the surgery of deformities, which is mainly the surgery of childhood.

Before continuing the discussion Mr. CHISHOLM WILLIAMS, F.R.C.S.E., read a paper on **An Analysis of 500 Cases of Lateral Curvature of the Spine and Treatment.** (PEDIATRICS, Vol. XI, No. 2.)

Mr. NOBLE SMITH (London) thought Mr. Clarke had done a good service in directing attention to the pathological conditions underlying these cases. If such a view had prevailed formerly we should now have a more scientific understanding of the conditions.

There is undoubtedly an underlying pathological influence in most cases. Mechanical forces alone may be present in deformities occurring in strong people in certain trades. Compositors, for instance, all had curvature in the old days from the use of the stick with the left hand. and the type in the right, but this state of things is disappearing with the use of the linotype machines.

Mr. CLARKE spoke of the influence of rickets. He (Mr. Smith) has long recognized the influence of some softening of the bones and a tendency of the ligaments to give way even in the absence of other signs of rickets. This theory is an old one, and was put aside when the muscular theory arose, and with it the tendency to lay the whole stress of treatment on the use of exercises, and it had even almost seemed as if any sort of exercise might be beneficial. Gymnastics may no doubt strengthen the muscles, but the curve may not disappear. But if we are to use remedies properly they must be used in a scientific manner. During the past twenty years he had come to lay more and more stress on this mode of treatment; of late years he had found the shortest time in which a child could be taught exercises to be from three to six weeks. No two cases are alike, and in prescribing exercises the exact effect upon the muscles must be watched and the movements modified accordingly. There is no proper teaching in this subject, and more attention should be given to the training of students in the treatment of such cases. Prophylaxis is the principal point to be attended to.

Mr. WILLIAMS said he would like to mention a case of flat-foot coming on acutely. A professional cyclist, 19 years of age, whose muscles and ligaments must presumably have been in good condition, raced with five others to Brighton and back. On the way home "his feet gave way." When seen both feet were greatly swollen underneath as if a pad were present. In a few days the swelling went down and he was found to have typical flat-foot. The feet were put up in plaster for four or five weeks at the end of which time he was found to have recovered completely.

Mr. MUIRHEAD LITTLE said that one-sided occupations were not sufficient to account for scoliosis, and one was driven

to look for some change in the structure of the bones. Some people said that rickets was an important cause, but in his experience rickets was not often seen.

He did not see flat-foot or knock-knee more often in scoliotics than in healthy people.

It was difficult to record the results of treatment. A committee of the American Orthopædic Society considered the question and recommended several methods as useful, but could not decide on any actual measure to recommend for general adoption.

We should all rather not put girls into supports, and some slight and slowly developing cases could be treated by exercises and without supports. In other cases patients cannot carry out systematic treatment by rest and exercises, and instruments are necessary. The function of an instrument is rather to keep the patient from falling into a bad position than to actually correct it, which, the speaker believed, was not possible. Exercise and massage must be relied on to prevent muscular atrophy and to develop the muscles so that they might support the spine.

Dr. FREDERICK TAYLOR asked whether fencing could ever be regarded as to blame for scoliosis. This is a charge sometimes brought against this exercise.

He would also ask Mr. Jackson Clarke for his opinion on the influence of heredity.

Mr. JACKSON CLARKE said in reply to the president that he did not think that fencing would cause lateral curvature in a healthy child. He had seen no instance in which it was alleged as a cause. With regard to heredity he thought it was the *tendency* to pressure deformities of all kinds rather than the particular deformity that was inherited. He thanked Mr. Muirhead Little for his remarks and was glad that he agreed that there was a pathological basis in most cases of scoliosis. Perhaps Mr. Little had rather more fear of instruments in such cases than he felt; he always dispensed with this part of the treatment when an equally good result could be obtained without the use of an instrument.

PAPERS.

Mr. NOBLE SMITH read a paper on **Ambidexterity as a Method of Treating Children**. PEDIATRICS, VOL. XI, p. 48.

Dr. F. TAYLOR said he was not quite sure whether the education of children in ambidexterity was quite worth the trouble. Would it not add considerably to the confusion in the world if we never knew which hand our neighbor was going to use?

Mr. NOBLE SMITH said there were many points of interest which he had not included in his paper. For example, the reason for the preponderating use of the right hand was obscure. He could not assume it to be merely a result of education. The preponderating weight of the viscera of the right side of the body had been considered accountable. Sir J. Struthers was an upholder of this theory. In some breeds of dogs the left legs were smaller than the right.

In his paper he confined himself to the prevention of deformity, but he thought ambidexterity had a much more important bearing. He thought it meant better development all round. In many trades it was found that those who could use both hands equally did more and better work.

Mr. MUIRHEAD LITTLE, F.R.C.S., read a paper entitled **An Analysis of a Series of Cases of Infantile Paralysis with some Notes on Treatment.** PEDIATRICS, Vol. XI, No. 3.

Mr. NOBLE SMITH said that the transplantation of muscular power was a proceeding still in its infancy. It was important after operating to continue all other methods which were useful in such cases. After transplanting tendons other contractions must still be dealt with.

Reaction of degeneration is generally taken as indicating that recovery of muscular power is impossible. Now after operation one notices an improvement in the whole nutrition of the foot, the coldness and cyanosis disappears, and this had suggested to him that the division of tendons of paralyzed muscles might have a beneficial effect on their nutrition. He had operated in this way in two cases; in one of these a neurologist examined the case and said that reaction of degeneration was present and that there was no hope of improvement. Nevertheless, marked improvement took place after the operation.

Mr. JACKSON CLARKE said that definite improvement sometimes did take place after divisions of tendons. Transplantation of tendons was a further advance, the transplanted tendon being from the same surface as the limb. When one comes to transplant tendons from the flexor to the extensor aspect of a limb, or vice versa, it was a grave question whether the patient would acquire voluntary control, although the appearance might be improved and the deformity lessened.

We shall have to watch the effects of these operations carefully before we can regard them as thoroughly established in surgery.

Mr. LITTLE, in reply, said he quite agreed as to the difficulty of expecting flexors to do the work of extensors.

In some cases the action of the peronei was found to be harmful and after transplanting these tendons it was difficult to know how much of the benefit was due simply to the division of the tendons and how much to the transplantation.

CARE OF NIPPLES.

In caring for the nipples of the nursing mother great harm is often done by mistaken methods of cleansing. Nasty-testing lotions are often applied by stupid nurses, who then wonder why the babies dislike to take hold. No washes are allowable; olive oil or lanoline should be used instead. And then for a protecting dressing tallow and beeswax or the raw white of an egg should be freely applied. Cracks and excoriations will then be astonishingly infrequent, but if either torturing accident occurs immediate attention is demanded. After thoroughly disinfecting with boracic acid lotion (5 per cent.), and anesthetizing with cocaine, the crack and raw surface should be treated with a 10 per cent. solution of silver nitrate, then dried by pressure of absorbent cotton and painted over with egg-albumin. For the next few nursings a glass-bell nipple shield should be used. Thus, by scrupulous care mothers can be saved from tortures that they too often suffer, and then it becomes far easier to persuade them to continue nursing their babies in accordance with the design of the Creator.—*Boston Med. and Surg. Journal.*

NEW YORK ACADEMY OF MEDICINE—SECTION ON
PEDIATRICS.*Stated Meeting, March 8, 1900.*

THOMAS S. SOUTHWORTH. M.D.,

Hysteria with Laryngeal Manifestations.—Dr. CHARLES HERRMAN presented a boy, 11 years old, who was suffering from hysteria and spasmodic contractions of the larynx. When the latter occur, as they do at intervals of a few minutes, he emits a loud, sharp bark. The mother of the child is also very nervous and is said to have “fainting spells.” There was nothing unusual about the previous history. A few weeks before he began to have attacks of nausea and vomiting, and these were followed by the laryngeal spasms already noted. These attacks do not occur during sleep. The diagnosis was based on the presence of certain hysterical stigmata. The boy complained of pains in different localities, though chiefly in the thorax and along the spine. He presents a characteristic narrowing of the field of vision. Charcot had described attacks of vomiting, associated with a diminution in the quantity of urea in the urine and the presence of urea in the vomited matter—in other words, a vicarious elimination of urea by the stomach. In the present case, examination of the urine had shown a diminution in the urea, but the vomited matter had not as yet been examined for urea. The boy was very easily hypnotized. Sedatives, such as the bromides and chloral, had been given, but, as usual in such cases, had done very little good. Quite probably some benefit would follow hypnotic treatment. It was quite evident from the boy’s appearance that his general nutrition needed to be improved.

The Chemical Composition of Milk and Cream.—Prof. JOHN ADRIANCE, Ph.D., delivered an address on this subject. He said that a knowledge of the chemical composition of milk was of great importance to the physician in order that he might properly modify the milk to suit the needs of the individual infant. It was usually accepted as a fact, that milk contains

4 per cent. of proteids, yet the latest analyses show only 3.5 per cent. of this ingredient, The average from the records of the United States Experimental Station was 3.3 per cent. These represent not the analyses of milk from one cow, but the results of analyses from a large number of samples taken from different cows and herds. In the case of the single cow the proteids would vary from 2.5 per cent. to 3 or 4 per cent. A large number of analyses, made at one of the dairies in this city, gave 3.59 per cent. of proteids. This might be due to the particular breed of cows from which the milk was obtained, or to the fact that the cows had had better care and better nourishment. One might expect, in cows well cared for, a higher percentage of proteids than in cows receiving less attention and poorer food. Rankin had shown some years ago that the non-fatty solids do not materially alter, and this he had also found to be true in a large number of analyses. The composition of milk was expressed with fair accuracy by the following: Fat, 4.28 per cent.; sugar, 4.71 per cent.; proteids, 3.59 per cent.; other solids, .77 per cent. As the fat increases the percentages of the other ingredients are materially lowered. This should be remembered when diluting cream. It held true whether the cream was obtained by the gravity method or by the use of the centrifuge. This speaker said he had made a number of analyses of different creams. The following was the calculated composition of skimmed milk: Fat, .110; sugar, 5.023; proteid, 3.731; ash, .787. This gives 9.641 for the total solids, and water 90.359. The foregoing facts could be well expressed in figures. For example, where the percentage of fat was 5, there would be 4.69 per cent. of sugar and 3.63 per cent. of proteids; where there was 10 per cent. of fat there would be 4.46 per cent. of sugar and 2.43 per cent. of proteids; where there was 20 per cent. of fat there would be 3.99 per cent. of sugar and 3.03 of proteids; where there was 55 per cent. of fat there would be 2.35 per cent. of sugar and 1.64 per cent. of proteids, and only .35 per cent. of ash. Even in the rich milk obtained from a herd of Jersey cows there was rarely more than 3.6 per cent. of proteids. Assuming, as was commonly done, that the milk contained 4 per cent. of proteids. if the milk were diluted below 1 per cent. the error from this cause would be very slight. The same was true of the dilution of cream within this limit. If, on the other hand, the

dilution was 2 per cent., the result would be almost one-fourth of a per cent. lower than had been estimated, and the error would be greater as the dilutions were higher. This was a matter of much importance, for physicians well know that even a difference of .2 per cent. in the proteids often made a great difference in the result with some infants.

Dr. J. E. WINTERS expressed his pleasure that these analyses confirmed certain impressions that he had had for a long time based solely on clinical experience. He had long believed he said, that as the fat increased the other ingredients decreased. For this reason he had asked Professor Adriance to study this matter. His clinical experience had taught him that there is less proteid in the upper part of the milk than in the lower part after the milk has been standing for a number of hours. The results differed with the quantity of milk taken, the length of time the milk had stood quietly, and the temperature at which the milk had been kept. He had been studying this problem very persistently for more than a year. He had found that if one took the upper two ounces from a quart of milk which had been standing for sixteen hours there would be seven and a half times as much fat as proteids, whereas if one took four ounces from a quart of milk that had been standing eight hours there would be only three and one-third times more fat than proteids. He had first reached this conclusion from a visit to a cheese factory, and he had expressed this view in the first lecture that he ever delivered on infant feeding. From that time until now he had used but one food for infants. He had never ordered any family to purchase cream for infant feeding, but had always directed that a bottle of milk should be purchased and should be allowed to stand in the refrigerator a certain length of time, and that then a certain definite measure of the upper layer should be taken for use in modifying the milk. His results from bottle-feeding had been just as satisfactory when first beginning with the cream mixture as they are to-day. It made a great difference in both the immediate and the ultimate results whether the physician directs that 1 ounce or 4 ounces be taken from a quart of milk for the feeding of the baby, and whether that milk has been kept at 32° F. or 60° F., and whether the milk has stood for four or sixteen hours. When a quart of milk has been

standing for sixteen hours in a refrigerator the milk was just as fresh and just as safe for an infant's food as when it had stood a much less time. He believed many of the poor results in infant feeding were due to the use of too small a percentage of proteids. It was very instructive to study the differences in muscular strength of infants and of the lower animals. It would be found that the muscular development proceeded in proportion to the percentage of casein in the milk of the animal and in the milk of the mother. For instance, in the cat, dog, and pig, whose milk contained a large percentage of proteids, the young soon become independent of the mother; in human milk there was the lowest percentage of proteids, and the human infant was the slowest to start on an independent existence, the muscles being proportionately very weak. This too low percentage of proteids was a very common cause of rickets in both bottle-fed and breast-fed children. This would almost always prove to be the case in infants that had been breast-fed.

Dr. L. EMMETT HOLT said that he was very much in sympathy with the last speaker regarding the percentage of proteids as used in milk and cream mixtures. A very large part of the malnutrition seen by the physician was the result of a low percentage of proteids, or from the fact that the children's digestion had been so deranged by previous bad methods of feeding that they became incapable of digesting food containing a large percentage of proteids. He found continually that infants were taking as high as 5 or 6 per cent. of fat, and always, he thought, with disastrous results. His own experience had been that the majority of physicians start with too large a percentage of proteids, and having got into trouble because of this, they then continue too low a percentage of proteids for the first year of life. His own plan was to begin with .5 or even with .25 per cent. of proteids, continuing this for the first few days. When this had been done, it was often possible to get the child to digest 1.5 per cent. of proteids at the end of the first six weeks. The object of the physician should be to begin with a low percentage of proteids, and push it up as rapidly as the child can manage it. It was very common for him to see an infant successfully fed on 2 or 3 per cent. of proteids at the end of two or three months. When an

increase was made in the proteids, especially if made rather rapidly, there was apt to be for a day or two some slight disturbance of digestion, but the child very soon became accustomed to the change, and would then thrive upon it. By warning the mother, and not being too hasty about reducing the percentage again, success would be achieved. He was more and more impressed with the simplicity of infant feeding when it was begun at birth, and when the child's digestion had not been spoiled by a day or two of bad nursing or bad feeding.

Dr. VANDERPOEL ADRIANCE said that the speaker of the evening had shown how inaccurate were the percentages of milk, whether modified at home or at the laboratory. The proportion of proteids was the keynote to the whole matter. The fat and the carbohydrate represent nothing but fuel in the child's body. The proteids, however, must be taken into the body as such, and are the vital principle of the milk. It is the portion which sustains vitality, preserves the proper composition of the blood, and sustains the muscular system. A child fed simply on fat and carbohydrate would starve. In the latter months of lactation children frequently lose weight, and become anemic or do not thrive. The symptoms, and the occurrence of slow dentition, were the result of the mother's milk containing an insufficient quantity of proteids. The proportion of proteids diminishes in the later months—indeed, by chemical analysis one could often predict that the milk supply was about to fail. One great object of the address given this evening was to show that a serious error had been committed in the past in the calculation of the proportion of proteids. He agreed with Dr. Winters, that rickets was often owing to a deficiency in proteids, and deficiency in ash, for these two diminish together, and the salts are necessary for the proper nutrition and development of the osseous system.

Dr. CHARLES HERMANN referred to a recent article by Dr. Louis Starr, of Philadelphia, in which this author had complained of the poor results he had obtained from the use of laboratory milk. The suggestion was made, in that paper, that the artificial separation of the cream might, by spoiling

the natural emulsion, interfere with digestion. Dr. Hermann said that by microscopical examinations and by experiments with the centrifuge he had been unable to find that the artificial separation of the cream made any perceptible difference in the fineness of the emulsion. He was inclined to think that Dr. Starr's ill success had been due to his habitual use of a small percentage of proteids.

Dr. WILLIAM L. STOWELL said that the proteids were of great importance, not only to the young infant, but to older children. It should be remembered that skimmed milk is rich in proteids, and that there is more heat-forming material in skimmed milk, and also that there is much bone-forming material in such milk. An effort should be made to persuade the Board of Health of New York City to allow the sale of skimmed milk here as a proper and valuable article of diet. Such traffic ought to be very easily regulated. It was a matter of special importance to the poor.

Dr. ROLAND G. FREEMAN criticized the statement made by Dr. Winters regarding the keeping of milk for sixteen hours in a refrigerator being a safe procedure. It might be for milk that was very fresh at the time it was put there, and if the temperature of the refrigerator was low, but it should be remembered that a great deal of the milk reaching the city was forty-eight hours old when it got to the consumer. He had determined, by actual observation, that in the average refrigerator the temperature was 17° C., or 62.5° F., i.e., 2.5° above the temperature at which the Board of Health insisted the milk should be kept during its transportation.

Dr. WINTERS replied that he had made that statement after years of careful observation and study of actual results. He had frequently kept milk for sixteen hours in perfect condition. If the milk were kept in the compartment with the ice, the temperature would always be 40° F. or under; but the temperature in the other compartment would usually be between 50° and 60° F. He had made these tests for considerable periods of time, having a thermometer in each compartment at the same time. Success in infant feeding was only achieved by the greatest attention to detail, and by insisting

upon exact observance of written directions. He had experimented chiefly with milk from a few selected dairies, and the results had tallied with the observations made with certified milk in Newark.

Dr. FREEMAN said that as the cream rises from the milk it carries with it nearly all the bacteria, so that the cream is very rich in micro-organisms.

Dr. THOMAS SOUTHWORTH said that while it was necessary and desirable to have a certain average composition for milk adapted to children of a certain age, it was often necessary to make wide variations in these proportions. A widespread fallacy was the notion that milk is made up of fat, sugar and proteids, and that cream is simply fat. It was desirable to have an approximate composition, given in round numbers, as such a basis was more easily manipulated by most practitioners of medicine. The error resulting from assuming too high a percentage of proteids was, perhaps, not so great as would appear from a casual survey of the charts exhibited. This was because the percentages of cream usually employed for making the dilutions were not very large.

SULPHUR AS A PREVENTIVE OF MOSQUITO BITES.

One of our readers informs us that, having seen a statement in some English medical journal to the effect that sulphur, taken internally, would protect a person against flea-bites, it occurred to him to try it as a preventive of mosquito bites. Accordingly, he began taking effervescing tablets of tartar-lithine and sulphur, four daily. He provided himself with several lively mosquitoes, and having put them into a wide-mouthed bottle, inverted the bottle and pressed its mouth upon his bare arm. The mosquitoes settled on his skin, but showed no inclination to bite him. If this gentleman's experience should be borne out by further trials, it might be well for persons who are particularly sensitive to mosquito bites to take a course of sulphur during the mosquito season, especially in view of the growing opinion that the mosquito is the common vehicle of malaria.—*N. Y. Medical Journal*.

ABSTRACTS

ACUTE LEUKEMIA IN CHILDHOOD, WITH REPORT OF A CASE.

THOMAS McCRAE (*Johns Hopkins Hospital Bulletin*, May, 1900,) reports the case of a boy, aged 3 years, who had been in almost perfect health before admission, but was found to have leukemia on examination of the blood, and died three weeks later.

In speaking of the general characteristics of leukemia in children, the writer calls attention to its relative rarity below the age of ten years. Acute leukemia is somewhat more frequent, the present case being the fourth to be reported within a year. The author compares the cases previously reported with his own. The course is acute, and the disease usually occurs in a male, with no special features in the family history or previous history except, perhaps, pre-existent throat trouble. This was marked in some instances and suggests possibility of a causal relationship. The possible relation of carious teeth, of the lymphatic diathesis, have also been suggested. The writer cannot say that children with the lymphatic diathesis are more apt to have leukemia, but in one of the cases reported there was a much enlarged thymus gland. The onset is usually with moderate suddenness; fever is present in a majority of the cases with hemorrhages and hemorrhagic rash. General glandular enlargement is found in less than half of the cases; in more the cervical glands alone show enlargement. The spleen was enlarged in every case where there are notes of an examination, and the liver also in more than half of the series. In all, the anemia is a striking feature, and the symptoms of the disease may be summed up as a severe anemia with frequent multiple hemorrhages, fever, enlargement of the spleen and frequently of the liver. In some cases general glandular enlargement, but in others only of the cervical glands, enlarged tonsils, ulceration of the mouth, pains in the bones, etc., are present. With these is a downward course to a rapidly fatal termination. Guinon and Jolly, in discussing the subject, divide the cases into three classes:

1. Typical forms: swollen glands, anemia, terminal hemorrhages.
2. Hemorrhagic form: features of an infectious purpura.
3. Pseudoscorbutic: lesions of the mouth, gums, and tonsils predominate.

In speaking of the diagnosis of these cases, Dr. McCrae says that it can only be made with certainty through the examination of the blood. In nearly all the cases emphasis is laid on the striking anemia. This, with the severe general symptoms and the occurrence of hemorrhages, should suggest a blood examination. Probably the conditions with which it is most apt to be confounded are: (1), an acute infection with specially marked throat symptoms, and (2), a hemorrhagic purpura. Bradford, in referring to his cases, has laid emphasis on the probability of considering

an acute leukemia to be merely an infection unless a blood examination be made. Probably, with more frequent routine work on the examination of the blood, cases will be found more often.

As regards the treatment of acute leukemia in children it can only be symptomatic with our present knowledge. In no case does any treatment appear to have been of any service.

In conclusion, emphasis may be laid on the necessity of careful study of the anemias of early life. The subject at present is in a rather chaotic state, and only through careful blood examinations can we hope to have the lines drawn more satisfactory.

THE INHERITANCE OF DEAFNESS.

W. K. BROOKS (*Johns Hopkins Medical Bulletin*, May, 1900), in a paper read before the Johns Hopkins Medical Society, March 5, 1900, discusses a book written by Professor Fay, one of the prominent educators of the deaf, who has been gathering statistics concerning marriages of deaf people. Professor Fay shows that of the pupils of the asylums who marry two-thirds marry deaf persons who have not been inmates of an institution. The author of the book studies the marriages of 8,000 deaf people and finds that deaf people are very much more likely to have deaf children than are hearing people, although they are much more likely to have hearing children than deaf children. Taking deaf people on the average, those who marry must expect to have one deaf child if they have eleven children, so that there are ten chances of a hearing child to one of a deaf child, while normally hearing people need not expect one deaf child in 10,000 children. Of course, this one may be the first or it may be the last of the 10,000 children, and the deaf child may be an only child, while the 9,999 may be in other families. The liability to deaf children is not equally great with all deaf persons, the character of the parental deafness having a great deal to do with it. Some deaf persons having large families with no deaf children, while all the children in others were deaf children.

There is a probability of transmission in 30 per cent. of congenitally deaf persons and in 5 per cent. of persons with acquired deafness, but the two classes cannot always be distinguished with exactness. Fay found further, that deaf persons who have deaf relatives will have nearly 40 per cent. of deaf children, while deaf persons without deaf relatives will have only 1.2 per cent. of deaf children. He also shows clearly that a hearing person with deaf relatives is just as likely to transmit deafness as in a deaf person, and it is a little more unsafe for a hearing person with deaf relatives to marry than for a deaf person without deaf relatives, so it really becomes a question of deaf relatives that cause the danger. Neither deaf persons nor hearing persons with deaf relatives should marry, and certainly they should not marry persons with deaf relatives. Deaf persons who marry hearing persons are more likely to have deaf children than those who marry deaf persons. This is probably so because deaf persons often marry hearing persons with deaf relatives. Twelve years ago Brooks stated that the only condition necessary to pro-

duce a deaf variety of the human race is that persons with deaf relatives should marry and continue to marry generation after generation, and this is what Fay's statistics prove.

Deaf persons who are sure they have no deaf relatives, may marry other deaf persons without deaf relatives, or may marry hearing persons without deaf relatives with impunity; but those who have deaf relatives, whether hearing or deaf themselves, should be discouraged from marrying either deaf or hearing persons who have deaf relatives.

The cases in which the transmission of deafness is greatest and where it rises above 50 per cent. is where the parties having deaf relatives marry these relatives; when the marriages are consanguineous marriages between persons with deaf relatives. The intermarriage of people with deaf relatives is almost sure to result in deaf children, more than half of the children being deaf whether the marriage is between deaf or hearing people.

THE CLEANSING OF THE TEETH.

H. M. Fletcher, M.D., D.D.S., as the result of elaborate investigations, gives the following formula:

R	Pulverized cereal.....	75 per cent.
	Sodium borate.....	18 “
	Potassium chlorate	7 “

Orris and menthol to flavor, and saccharin to sweeten to taste.

Dr. Fletcher says that it requires at least 5 grains at a time of any powder to be at all efficient in cleansing the mouth and teeth, and double or triple the portion is better; in every 5 grains of the above formula there is $1\frac{1}{4}$ grains of the combined remedies; this is sufficient to keep the saliva decidedly alkaline for some time after using and to counteract the ill-effects of sweets. Its preservative and antiseptic properties are shown from the fact that 10 grains of the powder taken into the mouth and held until dissolved, then ejected into a test-tube with a drachm of saliva, remained pure and unchanged for forty days, the tube remaining unstopped.

It seems apparent that with this prescription teeth can be cleaned without injury, and that decay may be retarded; a tablet made of it, allowed to dissolve slowly in the mouth, at frequent intervals, would tend to arrest decay.—*Cincinnati Lancet-Clinic*.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
under the direction of George Alexander Saxe, M.D.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, August-September, 1900.

Proceedings of the Section of Diseases of Children of the Thirteenth International Medical Congress (continued).

Very Large Doses of Belladonna in Whooping-cough. By Dr. GILLET, Paris.—The writer begins with small doses ($\frac{1}{10}$ to $\frac{1}{4}$ drops) of the tincture in children under one year. The dose is then gradually increased a fraction of a minim at a time, until the dose reaches 1 drop for each month in children under one year and 10 drops for each year in children under eight. The children must be kept under observation, however, and must be seen every other day, or, at least, every two or three days. As a rule, no toxic symptoms are observed, even from very large doses, provided the dose be increased gradually. The dose may be slowly diminished after the attacks of cough diminish in severity.

17. The Treatment of Whooping-cough with Compressed Air Baths. By Dr. ROCAZ and Dr. DELMAS, Bordeaux.—A daily bath of compressed air at a pressure of 10 to 40 cm. mercury was administered in a number of cases of whooping-cough with encouraging results. The baths seem to exercise a sedative effect upon the nervous system, to diminish the bronchial secretions, and to supply an excess of oxygen to the blood.

18. Concerning the Gravity of Rheumatism in Children from the Aspect of the Cardiac Complications. By Dr. H. BARBIER, Paris.—In this article the writer points out the dangers of rheumatism in children, especially with reference to cardiac complications. Children have died of heart failure weeks after recovery from rheumatism. In many cases the gravity of these attacks is due to coexistence of pericarditis.

19. Alcoholism in Children in Normandy. By Dr. BRUNON, Rouen.—The writer describes a lamentable condition of affairs in Normandy. He says that coffee has taken the place of milk for children at breakfast in Normandy and that coffee there is never drank without brandy. Among the children under ten years of age 70 per cent. use brandy in greater or lesser quantities and all drink coffee. "They are raised on coffee," as Dr. Brunon says. The principal cause of this alcoholism is the use of

alcoholic drinks by women. Alcoholism in children follows. Coffee and alcohol poisoning are the causes of the great infantile mortality in Normandy, which reaches 33 per cent. in Rouen. The children become dyspeptic, have eruptions on the skin, and lose all resistance to disease. After puberty more apparent alcoholic abuse is indulged in, especially absinthe and liquors, and cases of drunkenness are very frequently seen in public. In the richer families the children are allowed to drink various kinds of wine, and eat too much meat. Among the better classes the adolescents are, on the other hand, more sober, and the temperance movement is making many converts among them. The fight against alcohol should be taken up in the public schools.

20. **Rachitis in Russia.** By Dr. V. JOUKOVSKY, St. Petersburg, Russia is one of the countries in which rachitis is very frequent. The writer describes the studies of a committee of physicians organized at St. Petersburg for the study of rickets in Russia. He gave the bibliography of the subject, so far as Russian contributions are concerned, and described a number of anomalous cases which came under his observation among the poor of St. Petersburg.

21. **The "Marine Cure" of Rachitis in the Sanatorium of Banyuls-sur-Mer and of Saint-Trojan.** By Dr. CHARLES LEROUX, Paris. The author presented a series of photographs representing rachitic children who had undergone treatment in the sanatoria mentioned in the title, and who showed the beneficial effects of the "marine treatment." The general statistics were as follows: Of 156 cases 108 were cured and 32 were improved, 11 were discharged without improvement, and 5 died of digestive disturbances or of tuberculosis. In the majority of cases the deformities disappeared completely, the general condition improved markedly, and the patients gained in weight. The writer introduced a resolution which he submitted to the section, recommending the marine treatment for young rachitics between two and three years of age, and suggesting that such cases be sent to marine sanatoria for a period of two years at least.

DISCUSSION

Dr. CHAUMIER, Tours, said that he did not wish to deny the influence of the sanatorium, but thinks that rachitis can be cured very well in the family.

Dr. MARFAN.—In children under three or four years the deformities often disappear spontaneously. Some of the children shown in the photographs were already past that age and had pronounced deformities, and yet the marine treatment made these disappear completely. These results are brilliant, for I confess that I would have had recourse to surgery in the cases shown.

22. **The Anærobic Bacteria in Pathology, Especially in Infantile Pathology.** By Dr. VEILLON.—The importance of anærobic bacteria has been underestimated heretofore. The writer has studied a series of such germs and found that fourteen species of anærobic bacteria could be isolated in various affections of childhood. These germs produced a variety of infectious and dangerous processes, such as otitis, mastoiditis, cerebral abscesses, pulmonary gangrene, empyema, dental caries, sinusitis, phlegmons of the orbit, gangrenous pericystitis, appendicitis, peritonitis, abscesses of the liver, periuterine suppurations, certain puerperal infections, bartholinitis, urinary abscesses, infiltrations of urine, vesico-anal infections, perineal infections, and gangrenous abscesses. These germs are anærobes but have the property of increasing the tissues and of producing a process analogous to suppuration. They are the agents of putrid and gangrenous processes. The toxins which they produce give rise to a general poisoning of the system. The study of these toxins will some day enable us to work out a rational serum therapy for these conditions,

23. **Bacteriology of Perlèche.** By Dr. EYMERI (Military Surgeon). The writer found in the ulcers at the corners of the mouth no other germs than the yellow and white staphylococci. Inoculations of these germs into rabbits produced death of the animals more rapidly than the injections of cultures obtained from eczematous crust in other parts of the body in the same subjects, and therefore it is probable that staphylococci find peculiarly advantageous ground for growth in the lesions, known as perlèche.

DISCUSSION.

Dr. LEMAISTRE insisted on the contagiousness of perlèche and said that the infection took place chiefly through the vessels from which children drink. He believes that the affection is a specific one, and has never seen impetigo in the same child in whom perlèche was present, nor has he ever seen one child with impetigo give perlèche to another. The question of bacteriology is not as yet solved, and the fact that children with perlèche, as a rule, have very bad teeth should not be forgotten.

24. **The Plantar Reflex in Newly Born Children.** By Dr. G. FINIZIO, Naples.—In 5 per cent. the reflex is absent, in 10 per cent. it is not well marked, and in 15 per cent. there is an extension of the great toe or of all the toes. If the sole of the foot is pricked with a pin instead of tickled with a camel's hair brush, as is usually done, there is almost always a contraction of the toes of the foot, sometimes a series of reflex contractions of the upper segments of the same limb, and sometimes even of the opposite limb. The antagonistic reflex of Schaefer is identical with the plantar reflex; for it can be produced by stimulating the skin over the tendo Achillis. When the plantar reflex is absent in newly born children all the other reflexes are, as a rule, absent also. There is no connection between the intensity of the knee reflex and the plantar reflex. The extension of the toes may be encountered in newly born children who were delivered with forceps or who were born in a difficult and abnormal position. There is no relation between the hypertonic condition of the newly born child and the reflex of the sole of the foot.

25. **A Case of Typhoid Meningitis Occurring Ten Days Before the Onset of Typhoid Fever.** By Dr. HAGAPOFF, Constantinople.—The patient was a girl, aged 4 years, who developed an attack of what appeared to be tuberculous meningitis, together with a pneumonia on the right side. There was a history of tuberculosis in the family. Roseolous spots and other signs of typhoid fever appeared on the tenth day of the disease. The temperature went down on the fifteenth day and became normal on the twenty-first. The prognosis of typhoid meningitis is, as a rule, benign according to the writer.

26. **An Antiseptic Medical Service. Statistics for Ten Years.** By Dr. GRANCHER.—The author gives the results of his observations during the past ten years at the Hôpital des Enfants Malades in Paris. The chief aim of the management of the wards under the writer's supervision is to minimize as far as possible the danger of contagion through articles of clothing, vessels, etc. The measures adopted have already been described in the abstract of an article by Dr. Moizard, which appeared in this department in PEDIATRICS, Oct. 1, 1900, pages 279, 280.

27. **The Clinic for Nurslings in Dresden.** By Dr. FLACHS, Dresden.—This clinic has been established for the treatment of nurslings only and contains twenty-five beds. Children under the age of one year are admitted, but no contagious cases and no surgical cases are taken. The infants are fed at the breast, wet nurses being provided from the Dresden Maternity Hospital. Artificial feeding takes place for the older babies by means of cream mixtures which are prepared in the laboratory of the hospital. Sterilized milk in bottles is supplied to the patients free of charge.

28. **Concerning the Mortality of Children Under One Year in Norway.**—By Dr. AXEL JOHANNESSEN, Christiania. In the rural districts the average mortality of children is 8.5 per cent. In the cities it is 13 per cent. The lowest mortality is 1.4 per cent. in a small community in the prefecture of Sondre Trondhjem. The industrial districts have the highest averages, especially in the cities.

29. **The Importance of Medical Service in Asylums for Infants.** By Dr. CHARLES LEROUX, Paris.—The writer pleads for a more systematic medical supervision of the nurseries and infant asylums. In many of these there is no provision for medical service, as there are not supposed to be any sick children.

30. **Quinquennial Statistics of the Children's Hospital in Constantinople.** By Dr. VIOLI, Constantinople.

31. **Quinquad's Treatment of Infantile Syphilis.** By Dr. H. GILLET, Paris.—This treatment consists in the application of a plaster composed as follows:

R	Diachylon.....	3000
	Calomel.....	1000
	Castor oil.....	300

To be spread upon linen strips, each square centimeter of the plaster thus obtained will contain 1.20 gm. calomel. A piece 10 cm. by 15, or 15 by 20 or 30, is applied to the skin, covering about half the circumference of

the body. The plaster is changed every week; first it is applied to the front of the body, then to the back, and so on. The epidermis is somewhat macerated under the plaster after repeated applications. The writer reports favorable results with this form of treatment, and claims the following advantages for this method: It does not affect the digestive tract; it is easily applied, and absorption continues without interruption. The plaster may be removed at any time and the treatment thus stopped. The patient's parent need not know that mercury is being used.

32. The "Marine Treatment" of Tuberculosis of the Bones and Joints. By Dr. CHARLES LEROUX, Paris,—The writer gives the result of treatment of these affections in the sanatoriums for Children at Banyuls-sur-mer and Saint-Trojan. The results, on the whole, are very favorable. In all cases these results were obtained without surgical interference, except minor surgical measures.

(To be continued.)

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, August-September.

Reports and Communication to the Section on Surgical Affections of Children of the Thirteenth International Medical Congress, Paris, 1900.

REPORTS TO THE SECTION.

First Question: Congenital Dislocation of the Hip.

Dr. A. HOFFA, of Wuerzburg. The Bloody Operation for Congenital Dislocation of the Hip. (1). This operation is indicated in all cases where the bloodless method has been tried without success. (2). In children between the ages of three and eight years the operation selected should be that which forms a new acetabular cavity for the replaced head of the femur, according to the Hoffa-Lorenz method. (3). This operation should not be performed in children who are younger or older than the ages indicated. (4). The typical Hoffa-Lorenz operation will always be accompanied by a re-formation of a cavity. (5). Strict asepsis is the vital factor in these operations; if this be observed the operation is not dangerous. (6). The wounds need not be sutured; in the after-treatment gymnastic exercises play an important part, but too violent passive movements should be avoided. Special precautions must be taken against ankylosis in flexion adduction. Ankyloses only take place where there has been a suppuration of the wound, and when the age of the child was too advanced. The limit for the operation is the seventh year for bilateral cases, and the eighth year for unilateral cases. (7). The results of the operation are satisfactory; the treatment must last, on the average, four months, when the patient should begin to walk. After one year he should be again examined and if the condition is satisfactory he may be considered cured. (8). In unilateral cases, where the patient has passed the eighth year transverse subtrochanteric osteotomy must be performed. In bilateral cases in older persons Hoffa's pseudoarthrosis operation gives the best results.

(To be continued.)

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No. 3

ORIGINAL ARTICLES

CONGENITAL HYPERTROPHIC STENOSIS OF PYLORUS, WITH AN ACCOUNT OF A CASE SUCCESSFULLY TREATED BY OPERATION.*

By JAS. H. NICOLL, M.B.,

Extra Surgeon, Children's Hospital; Assistant Surgeon, Western Infirmary; Consulting Surgeon, Ear Hospital, Glasgow.

ON July 18, 1899, I was asked by Dr. Ritchie to see in consultation Baby P., then aged 5 weeks, suffering from "congenital obstruction of the pylorus." The facts of the case, as observed by Dr. Ritchie, led me to agree with him in what I had first been inclined to regard as a somewhat "speculative diagnosis."

These facts were that the child had been born healthy, and had for a week remained so, except that in fifteen to twenty minutes after each meal (he was at first "on the breast") he vomited the entire contents of his stomach. The vomiting was a prompt and complete ejection of the milk previously taken, in large part clotted, but not otherwise changed. It was not preceded or accompanied by hiccough, nausea, pain, or difficulty, and the act accomplished the infant appeared to be perfectly comfortable until hunger induced another meal, which, in turn, was in due time vomited.

* Read before the British Medical Association at Ipswich, August, 1900, Section on Diseases of Children.

This persisted and its effect became evident in progressive emaciation. Ultimately through the attenuated abdominal parietes there stood out the form of a considerably dilated stomach, across the anterior wall of which there passed from time to time marked peristaltic waves.

Operation, which Dr. Ritchie had in view in requesting the consultation, was proposed to the parents, who, naturally enough, postponed resort to what, in the circumstances, appeared to be an exploratory and tentative proceeding. A week later, the infant having become exceedingly emaciated and feeble, the parents requested operation, which was accordingly performed—at the age of 6 weeks.

The pylorus was found represented by a bulky ring of



Congenital Hypertrophic Stenosis of Pylorus.

Diagrammatic representation of conditions found at the operation.

- 1.—1' Ring of (fibromyomatous?) tissue, constituting a funnel at the pyloric end of the stomach and tapering to its densest and narrowest part at 3.
- 2.—Incision in stomach wall during operation.

muscular (or fibromatous?) tissue. In the child's wasted and enfeebled condition a pylorotomy appeared hopeless. I therefore carried out an operation which was practically a Loretta's. The illustration represents diagrammatically the state of matters existing. Between 1 and 1' is the dense and bulky ring of tissue, arranged in the form of a funnel, tapering to its densest part at 3. I opened the stomach by the incision 2, passed in a pair of dressing forceps, forced this with

a screwing motion down through the constriction into the free intestine below 3, and then expanded its blades till the peritoneal coats at 3 ruptured, thus widely dilating the thickened and practically completely stenosed pylorus. Suture of the stomach wall, followed by suture of the parietes, completed the operation.

The infant made a perfect recovery from the operation, the effect of which has been complete relief of the previous obstruction.

Vomiting has disappeared, digestion is satisfactory, and the bowels (previously, of necessity, obstinately constipated because empty) now act regularly. The result is evident in the infant's condition; the change from extreme emaciation to the present plump condition has been very striking; whether the relief obtained by the operation is to prove permanent remains to be seen. The operation was intended as a temporary measure adopted in face of the extreme debility of the infant. Up to now, however, there has not been the slightest indication of that re-contraction which was feared and for which I had reserved pylorotomy in the event of the infant gaining strength as the result of the palliative measure.

At the present date (twelve and a half months after operation), except that he is slightly rickety, the child remains in perfect health, taking milk and farinaceous foods daily.

The case would appear to be probably the first successful case of operation for this affection.

REMARKS.

So-called "congenital hypertrophic stenosis of the pylorus" has been gradually claiming attention of late years; there are now on record some thirty or more cases in which sufficient evidence exists to establish the diagnosis; and the impression is gaining ground that the affection is considerably more common than has been supposed. The symptoms are such as to lead to some difficulty in the diagnosis; and it is not improbable that the terms "infantile marasmus," "gastric catarrh," and "gastric myasthenia" may have covered such cases.

Symptoms.—These have been present in certain cases from the date of birth. In others they have begun to manifest themselves only after an interval of days and weeks. (This

probably is dependent on the degree of stenosis present, absolute or partial). They are as follows:

1. *Vomiting*.—This is seemingly causeless, is unaccompanied by other symptoms of dyspepsia, and is ultimately persistent despite ordinary appropriate treatment, though in certain cases it has been for a time diminished or abolished by dieting and washing out the stomach. These three characteristics of the vomiting have been fairly constant in recorded cases. In other features of the vomiting cases have varied widely. Thus, in regard to: (a) *Reaction*—In certain cases this has been found normal, while in others acidity has been found increased, and in others diminished. (b) *Period*—In certain cases vomiting has occurred after each meal, either soon after or hours after. In others vomiting has only occurred after several meals have been taken. (c) *Nature*—In certain cases the milk has been returned unaltered; in others coagulated; in others accompanied by evidence of fermentative processes in the stomach, and in a few accompanied by small quantities of bile (partial stenosis only?).

2. *Constipation*.—This is a constant feature, and inasmuch as the intestines have been invariably found empty its presence is not extraordinary.

3. *Emaciation*.—Progressive and ultimately extreme.

4. *Physical Signs*.—In the early stages while the body is well nourished and dilatation has not commenced in the stomach there may be none. Later, when the emaciation of the abdominal parietes makes their detection the more easy the following may be evident: (a) Peristaltic gastric waves; (b) Periods of normal dilatation of the stomach (after a meal?), alternating with periods (after vomiting?) during which the organ may be felt like a ball, firmly contracted; (c) Marked abnormal dilatation of the stomach associated with and rendered the more prominent by a collapsed condition of the rest of the abdomen consequent upon the empty state of the intestine; (d) Pyloric tumor detectable by palpation. This has been present in a few cases only, cases in which the hypertrophy of the pyloric tissues has been marked and the abdominal parietes very thin. In the large majority of recorded cases it has not been present.

Prognosis.—Broadly stated the affection is fatal unless relieved by surgical treatment. It is suggested by at least one writer on the subject that cases of the affection have been reared by careful dieting (presumably cases where the stenosis was of low degree). It is not, however, suggested that this is other than exceptional, and as there exists no actual evidence that any given case surviving gastric symptoms in infancy has been a case of congenital hypertrophic pyloric stenosis, this exception to the general rule of fatal issue cannot be held as proved.

Morbid Anatomy.—At least twenty cases have been subjected to post-mortem examination. In all of these no lesions of importance other than those connected with the stomach would appear to have been found. In connection with the essential lesion the following parts have been investigated in different cases:

Esophagus.—In several this is noted as having been dilated; in the large majority it has been unaltered. *Stomach*—In certain cases the organ has been found little, if at all, altered; in others marked hypertrophy has existed; in others still abnormal dilatation, in a few to an extreme degree, has been present. In a number hypertrophy and dilatation have co-existed. In no case apparently has any distinct evidence of gastritis been found. *Pylorus*—The same funnel-shaped circular thickening of the pyloric end of the stomach has existed in all. This has varied in extent from $\frac{1}{2}$ inch to 2 inches and has tapered to an apex at or beyond the pylorus. In several cases it is noted that the pyloric end or apex projected into the duodenum, as does the cervix uteri into the vagina.

The lumen has varied from that of a "No. 4 catheter" to complete impermeability. In no case of congenital hypertrophic pyloric stenosis has any actual atresia been found.

The mucous membrane of the pylorus has been described as absolutely normal, as exhibiting evidences of catarrhal inflammation and as being puckered into longitudinal folds in different cases. Microscopically the examination of the tissues of the thickened pyloric ring has yielded various results in different cases. These have included hypertrophy of all the muscular coats, hypertrophy of the circular coat alone, fibrous hyperplasia of the submucous coat, combination of muscular

hypertrophy with fibrous thickening of the submucosa. *Intestine*—This has in all cases been found empty and collapsed.

Treatment.—There would appear to be a general consensus of opinion that the only hope of saving the lives of these infants lies in surgical intervention. At the date of the operation in the case of Baby P. this would appear to have been carried out in three cases in all. That of Baby P. resulted in relief of the obstruction, by dilatation of the pylorus, which relief has been maintained for over one year and promises to prove permanent. Dr. Willy Meyer, of New York (quoted by Meltzer, *New York Medical Record*, August 20, 1898) performed gastroenterostomy in an infant for congenital pyloric obstruction, the case terminating fatally at the end of thirty hours through obstruction caused by the the Murphy button employed. Stern (see below) performed gastroenterostomy for pyloric obstruction in an infant of five weeks with fatal result. Sonnenburg (see below) successfully performed pyloroplasty in a boy of five years. From the symptoms and from the anatomical conditions found during operation Sonnenburg suggests that the case may be one of congenital obstruction of the pylorus. It is obvious, however, that such a case, both in clinical aspects and in prognosis, is not on all fours with the cases which have been generally included under the title Congenital Hypertrophic Stenosis of the Pylorus, and, indeed, in the history of the case it is not easy to see on what Sonnenburg founds his suggestion.

Within the year which has passed since the date of operation in Baby P's case several cases have been published, one at least of which has been subjected to operation.

Causation.—Various theories have been advanced. As, however, their consideration lies within the provinces of the physiologist and pathologist it must suffice here to enumerate the various views at present held. These are as follows:

1. That the condition is the result of a congenital developmental aberration, possibly connected with the junction at the pylorus of "two different processes of development."

2. That the condition is the result of a congenital hypertrophy of the muscular walls of the pylorus, secondary to antagonistic and incoördinated action of the muscles of the stomach, on the one hand, and the pylorus on the other, this

incoördination being dependent on functional disorders of the gastric nervous system and ultimately resulting in "congenital gastric spasm."

3. That the condition is the result of spasmodic contraction arising from gastric (dyspeptic?) irritation after birth and therefore not congenital.

4. That the condition is the result of chronic inflammatory processes.

Bibliography.—It would appear (Meltzer) that Williamson in 1841, and Davoski in 1842, each recorded a case, and that for forty-six years thereafter the subject lapsed from notice. In 1888 Hirschsprung, of Copenhagen, recorded a third case and since then cases have been recorded from time to time.

Of the more important of the readily accessible communications on the subject may be mentioned recent papers by Meltzer, of New York (*New York Medical Record*, August 20, 1898); Thomson, of Edinburgh (*Edinburgh Hospital Reports*, 1896, Vol. IV.; and *Scottish Medical and Surgical Journal*, June, 1897); and Rolleston and Hayne, of London (*British Medical Journal*, April 23, 1898). Thomson's papers contain a statement of the "congenital gastric spasm" theory which he has put forward in explanation of the origin of the pyloric stenosis, along with accounts of three cases. Rolleston and Hayne's paper is devoted to an analysis of the published accounts of cases which they have collected, with the record of a case under their care. Meltzer's paper contains, along with particulars of a case, a wide review of the subject, embracing a discussion of the symptomatology, pathology and treatment of the affection, and a criticism of Thomson's theory.

The following bibliographical list is taken from Meltzer's paper (*New York Medical Record*, August 20, 1898), and succeeding it are the further references I have been able to find:

1. Ashby, Archives of Pædiatry, 1897.

2. Finkelstein, Jahrbuch für Kinderheilkunde, 1896, vol. xliii, p. 105.

3. Thomson, Scottish Medical and Surgical Journal, 1897.

4. Henschel, Archiv für Kinderheilkunde, 1891, vol. xiii., p. 32.

5. Schwyzer, New York Medical Journal, 1897.

6. Rolleston and Hayne, British Medical Journal, 1898.

7. Williamson, London and Edinburgh Monthly Journal of Medical Science, 1841, p. 23.
8. Davoski, Caspar's Wochenschrift, 1842, No. 7.
9. Hirschsprung, Jahrbuch für Kinderheilkunde, 1896, vol. xxiii., p. 61.
10. Gran, Jahrbuch für Kinderheilkunde, 1896, vol. xliii., p. 118.
11. Landerer, Angeborene Stenose des Pylorus. Dissertation, Tübingen, 1879.
12. Maier, Virchow's Archiv, 1885, vol. cii., p. 413.
13. Huebner, quoted by Finkelstein.
14. Peden, Glasgow Medical Journal, 1889, p. 416.
15. Pitt, Transactions of the Pathological Society of London, 1892, p. 63.
16. De Brun Kops, Nederlandsch Tijdschrift voor Geneeskunde, 1896, No. 19 (after Thomson).
17. Thomson, Edinburgh Hospital Reports, 1896, vol. iv.
18. Schwyzer, New York Medical Journal, 1896, 21st November.
19. Fenwick, S., The Disorders of Digestion in Infancy and Childhood, London, 1897.
20. Leesschaft, Jahrbuch für Kinderheilkunde, vol. xxii., p. 164.
21. Brandt. Die Stenose des Pylorus. Dissertation, June, 1851.

The succeeding references are to be added:

- (a). Cantly, British Medical Journal, 1898, vol. ii., 1490; and Lancet, 1898, November 12. p. 1264.
- (b). Bartman, North American Journal of Homeopathy, 1899, 3, s., vol. xiv., p. 41.
- (c). Still, British Medical Journal, February 11, 1899.
- (d). Pfaundler, Wien. Klin. Wochenschr., 1898, p. 1025.
- (e). Edsall, Journal of American Medical Association. 1899.
- (f). Champneys and D'Arcy Power, British Medical Journal, March 20, 1897.
- (g). Emerson, New York Medical Journal, August 9, 1890.
- (h). Stern, Wiener Klinische Wochenschrift, 1898, vol. ii., p. 1024.
- (i). Hammer, Prager Medicinische Wochenschr.. 1899, vol. xxiv., p. 25.
- (j). Van Valzah and Nisbet, Diseases of the Stomach, New York, 1899.
- (k). Sonnenburg, Centralblatt für Chirurgie, 1898, No. 1, p. 25.

Hammer (i) insists on the distinction between congenital stenosis (characterized by the hypertrophic thickening so constantly found) and congenital atresia (in which no such thickening exists). Both conditions give rise to the same symptoms. He fully describes a case of congenital atresia, in which the pyloric end of the stomach and the upper end of the duodenum formed *culs-de-sac* abutting on one another and

united by a fibrous band; in this there was ultimately found an exceedingly fine channel, which however had proved impervious to fluid under pressure used as a test. He refers to two cases of congenital obstruction of similar nature previously published by Leesschaft and De Brun Kops (Nos. 16 and 20 in Meltzer's list). Emerson's case (g) must be regarded also as one of atresia. In the description of this case it is stated that the pylorus itself was dilated, while just beyond it the lumen of the duodenum terminated abruptly, owing to "a gathering together of all the tissues of the gut at that point, much as a bag is drawn together by a string." In the case recorded by Champneys and D'Arcy Power (f) circular thickening of the pylorus coexisted with a complete transverse septum occluding the duodenum at the orifice of the bile duct. The recently published treatise by Van Valzah and Nisbet (j) contains (with the exception of mention in Keating's Cyclopædia and Fenwick's treatise, *vide supra*) the only references of any note to the subject which I have been able to find in current text-books. These authors carefully distinguish between congenital atresia and congenital stenosis and point out that, while the symptoms of the two are similar, those of the former necessarily run a rapidly fatal course.

Sonnenburg (k) records the case of a boy, aged 3 years, suffering from symptoms of pyloric obstruction, which were relieved by pyloroplasty. Sonnenburg suggests from the conditions he found during operation that the case is really one of congenital hypertrophic stenosis. It is evident, however, that, clinically, the case does not fall into the same group as those recorded.

Pfrundler (d), arguing apparently for the most part from appearances he has noted in post-mortem examinations, holds that "stenosis" of the pylorus in infants is not necessarily congenital in origin but is often developed in the early days or weeks of life. He regards it as not being a stenosis in the sense of organic narrowing, but a spasmodic condition or fixation of a normal functional phase of the stomach, and he states that such fixation of a normal functional phase is common at the moment of death and is found at the necropsy.

Stern (h) records the case of an infant of 5 weeks in which for symptoms of congenital pyloric obstruction he performed gastroenterostomy. Death followed at the end of twenty-four

hours. Post-mortem the usual funnel-shaped thickening was found.

Apart from the question of treatment on which opinion appears to be fairly formed, and of causation and nature on which speculation is busy, the important aspect of the subject is that of diagnosis. The symptoms are well-defined and vary but little. Unless examined in detail, however, they present a clinical picture which, as a whole, possesses a strong superficial resemblance to that of infantile marasmus, associated, as it frequently is, with various forms of gastric disturbance. That it may be easy to fall into such error will be evident to those seeing much of the disorders of infancy; and it is somewhat striking that for forty-six years the significance of the combination of symptoms characteristic of the disease should have been forgotten or overlooked. In the case of Baby P. (*vide supra*) Dr. Ritchie stated that what prompted him to observe the infant's symptoms closely and ultimately to feel a considerable degree of confidence in his diagnosis was the presence in his recollection of the particulars of Dr. Peden's case (14), published in Glasgow in 1889.

REMEDY FOR SICK HEADACHE.

It is stated that two teaspoonfuls of finely powdered charcoal, drank in half a tumbler of water, will give immediate relief to the sick headache, when caused, as in most cases it is, by too much acid on the stomach. This remedy has been highly recommended.—*Medical Talk*.

TO ADMINISTER COD LIVER OIL.

A somewhat clever ruse, practiced for the purpose of administering cod liver oil to those who object to it, is described as breaking up a conspiracy among the patient's olfactory, optic, and pneumogastric nerves. The patient probably confesses he likes sardines, so without his becoming aware of the trick, the preservative cotton seed oil is emptied away, and the sardine box is filled with fresh cod liver oil, of which every day the patient takes a substantial amount.—*The Medical Age*.

SMALLPOX IN CHILDREN.

By FREDERICK LEAVITT, M.D.,
St. Paul, Minn.

LAST year I reported twenty-one cases of smallpox to the Minnesota State Medical Society, all of which cases were adults. During the last winter and present spring I have had opportunity to study the disease in many children and have taken photographs of them in different stages



Chicken pox.

of the eruption. There seems to be no difference between smallpox in the young and old, except that little children have



Discrete smallpox with recovery. Patient aged six years.

less strength to battle with the disease and succumb more readily. The type is light and though there have been few deaths from smallpox most of these have been children.



Discrete smallpox, slightly confluent under chin, eighth day of eruption.
Patient recovered. Aged $3\frac{1}{2}$ years.

The common error of calling variola varicella is constantly being made. This seems the more reprehensible since we have had the former disease in our midst almost constantly for more than a year. Part of this time it has been fairly epidemic. One physician in a neighboring city treated several cases in a single family, calling smallpox chicken pox. After the death of one member and after contracting the disease himself a correct diagnosis was made. This would seem almost incredible, and yet this physician had practiced for many years and was the local health officer.



Smallpox, confluent, of face and wrists. Sixth day, late vesicular stage. Died on the 11th day. Aged 4 years. One of a family of six to have the disease.

Out of seventy-five cases carefully examined only one had any sign of a vaccination scar. In this case (a man 40 years old) there was a faint mark on the arm as the result of a vaccination in infancy. The eruption in this instance was peculiar and of the varioloid type.

Many cases of modified smallpox have been observed; that is, cases vaccinated during the period of incubation. A wife, for example, vaccinated immediately upon the discovery, which was early, that her husband had variola, developed the contagion in due time. Meantime, the virus took, and though the postules were individually typical, in number they did not exceed two score on the entire body. And what is significant from a diagnostic standpoint, most of these were on the palms of the hands and the soles of the feet.

Here is an interesting history: A young woman came to the city from Sweden the latter part of March. She was vaccinated, but not successfully, on board ship. Soon after arrival she was taken sick and ultimately broke out with smallpox.



Confluent smallpox be'tween fifth and sixth days. Next to the youngest of a family of six to have the disease. Age $2\frac{1}{2}$ years. Recovered.

A physician was not called until two weeks later, when a married sister with whom she was staying, together with husband and children, became ill with the same disease. The ages of the children were four years, two and a half years, and eleven months. The household contained one other member, a girl between six and seven years old, who was vaccinated last fall upon entrance to the public school. She escaped the contagion.

THREE IMPORTANT FACTS.

There are three great facts in connection with tuberculosis of which the public must be made fully conscious:

The first is that the disease is *communicable*. The truth and importance of this fact we have ourselves only of late entirely realized. The public, therefore, must be allowed a due amount of time before they generally accept it. But accepted the fact must be, and it behooves each one of us to do all that he can towards promoting its acceptance.

The second is that the disease is *preventable*. This follows almost as a corollary to the previous statement, and when the truth of it becomes widely and fully understood how great will be the responsibility of those who wilfully disregard it.

The third fact is that the disease is *curable*.—EDMUND OWEN, M.D., *Montreal Medical Journal*.

AN ANALYSIS OF A SERIES OF CASES OF INFANTILE PARALYSIS WITH SOME NOTES ON TREATMENT.*

By MUIRHEAD LITTLE, F.R.C.S.,
Surgeon to the National Orthopædic Hospital.

THE paper that I have the honor to lay before you deals with all the cases of infantile paralysis of which I have notes that have during the last three years been under my care at the National Orthopædic Hospital or in private practice, or which I have seen at the Surgical Aid Society. By far the greater number have been patients at the hospital. Such cases are not curable and constantly need attention, and therefore they remain patients often for many years, and hence errors may arise in statistics from individual cases being reckoned more than once. In compiling my analysis I have avoided this error by entering such patient's name and by careful indexing. It will be observed that out of 147 deformities, in 115 patients only 4 affected the upper extremity. It by no means follows that this is a true proportion of the incidence of the disease, as probably more patients would apply for relief of deformity of the legs and feet than of the upper extremity, the former, generally speaking, being more amenable to surgical treatment.

Moreover, those cases in which the cervical portion of the cord has been affected are less likely to survive. Of 115 patients 60 were females and 55 males. Of the 147 limbs affected 75 were of females and 72 of males. The incidence in the sexes is nearly equal, girls being slightly more liable; on the other hand, palsies were more often severe in boys. Thus, two limbs were affected in 18 boys and in only 14 girls; of these, in 8 boys and 7 girls the palsy was what I should call extensive. The left side was more often affected than the right, the figures being: left, 78; right, 68; side not stated 1. In 98 cases the age of onset was ascertained. Two were said by friends to be congenital otherwise the limits of age were 6

* Reprinted from advance sheets furnished by courtesy of the *British Medical Journal*.

weeks to 11 years. Nearly one-third of the cases occurred in the second year and in 78 cases before the end of the third year.

The following are the details:

24	{	6 cases occurred in the first 6 months.			
		18	"	"	between 6 months and 1 year.
31	{	15	"	"	12 and 18 months.
		16	"	"	18 months and 2 years.
23		"	"	"	3d year.
11		"	"	"	4th "
4		"	"	"	5th "
3		"	"	"	6th "
1		"	"	"	10th "
1		"	"	"	11th "

In 17 cases the age of onset was not ascertained. In 7 cases nothing wrong was noticed until the child began to walk.



Mr. E. Muirhead Little's Case, before treatment.

No obvious connection could be traced between the age at onset and the severity of the attack. In 41 cases there was either

no definite attack, so that the friends could only say that the child lost the use of its muscles between certain dates, or else the loss of power was seen to come on gradually. In 43 cases paralysis came on suddenly and in 19 of these the child, which was put to bed apparently well, was found in the morning palsied. In the remaining 31 cases no history of the mode of



Mr. E. Muirhead Little's case of transference of the Peronei into the palsied Tibialis Anticus, *before treatment*, showing the lateral eversion of the foot when the patient tried to dorsiflex the ankle.

onset was obtained. "Convulsions," "fits," and "teething," although so popular among mothers of the hospital class, and even with some practitioners, were very seldom mentioned in connection with the onset of paralysis in this series of cases. Convulsions were said to have preceded the attack in 4 cases only, unconsciousness lasting 9 to 48 hours in 4 others, but in 2 of these no paralysis was suspected at the time until the

child walked, and "fits" only 3 times. Considering that the disease is commonest during the period of active eruption of the milk teeth, it is surprising that "teething" should be hardly ever invoked as a cause. Pain was noticed in only one case, and fever and feverishness twice.

As regards injury also, the histories are mostly negative, surprisingly so when one considers how often the children of the hospital classes are exposed to accidental violence. In only 9 cases were "falls" mentioned, but in one of these the child, aged 16 months, was knocked down by a horse, and 3 days afterwards became insensible and was taken to a hospital, where he was said to have remained unconscious for 14 days. This was a typical case of infantile paralysis, $2\frac{1}{2}$ inches shortening, and talipes calcaneo-valgus with atrophy of the opposite arm. Influenza, vaccination, and diphtheria were each once assigned as causes. In only one case was palsy said to have been caused by sitting on damp grass. In this instance the child, previously well, could not walk indoors. In 15 cases it was stated that the paralysis, which was at first extensive, was to a great extent recovered from in the course of some weeks or even months. For example, both legs might be extensively palsied, but one almost entirely recovers.

Tabular Statement of Deformities Observed in One Hundred and Fifteen Cases.

	Fifty-five Males.	Sixty Females.	Totals.
Talipes equinus.....	8	12	20
" equino varus.....	11	9	20
" " valgus.....	5	9	14
" calcaneus.....	—	5	5
" calcaneo-valgus.....	12	6	18
" valgus.....	7	14	21
" varus.....	6	6	12
Pes cavus, etc.....	9	5	14
Flail-foot.....	10	5	15
Weak-foot.....	1	—	1
Weak knee.....	—	1	1
Contracted knee.....	1	1	2
Upper extremity.....	2	2	4
Total.....	70	75	147

There are thus 54 cases in the equinus and 23 in the calcaneus group. Arranging the deformities according to the abduction or adduction of the foot there will be found 53 cases in the valgus and 46 in the varus group, including pes cavus.

As regards the upper extremity, in one case the right arm was 1 inch shorter than its fellow and weak, but no definite palsy could be made out. In a second case the muscles of the left upper arm and shoulder were almost all paralyzed, although some of the muscles of the left forearm and hand were active. In a third there was palsy of the flexors of the fingers, the interossei and short muscles of the thumb, and the triceps and latissimus dorsi and lower half of the pectoralis major on the left side. In a fourth case there was palsy of the extensors of the fingers.

Scoliosis was recorded in four cases and lordosis in two.

Tabular Statement of the Principal Muscles and Groups of Muscles Affected in One Hundred and Forty-three Limbs of One Hundred and Eleven Patients.

	Complete Palsy.	Very Feeble.	Weak.	Totals.
Flexors of great toe.....	39	17	8	64
Flexors of four outer toes.....	37	21	8	66
Tibialis posticus.....	77	3	10	90
Tibialis anticus.....	83	6	11	100
Extensor proprius pollicis.....	51	9	19	79
Extensors of four outer toes.....	57	15	16	88
Peroneus longus.....	53	12	9	74
Triceps cruris (gastrocnemius and soleus).....	33	16	6	55
Flexors of knee.....	18	2	6	26
Quadriceps extensor.....	38	1	13	52
Adductors of thigh.....	13	1	4	18
Abductors of thigh.....	12	2	4	18
External rotators of thigh.....	14	1	3	18
Internal rotators of thigh.....	15	0	3	18
Flexors of hip.....	15	1	2	18
Extensors of hip.....	13	0	2	15
Erector spinæ.....	3	0	3	6

As might be expected, the frequency of the occurrence of palsy generally diminishes from the periphery towards the center, with one striking exception. In two cases the rather unusual occurrence of marked palsy in the proximal segment of a limb without actual palsy of any muscle in the distant segments was noted. The quadriceps was completely palsied without any of the leg and ankle muscles being similarly affected. The contrast between the wasted thigh and the fairly well developed leg in these cases is very striking.

The two tibial muscles, and especially the tibialis anticus, as will be seen in the table, are especially vulnerable. Next to them in order of frequency come the extensors of the toes

(dorsi-flexors of the ankle) and then the calf muscles and flexors of the toes (plantar flexors of the ankle). In the upper part of the lower limb the quadriceps extensor is especially vulnerable. It was affected nearly as often as the great calf muscles and twice as often as the hamstrings or any other group in the thigh. The remaining groups of muscles were comparatively seldom affected.



Alice P. showing effect of attempt at voluntary dorsiflexion after operation (August 1900.

TREATMENT.

The majority of these cases were treated by subcutaneous section of contracted tendons and fasciæ by correcting splints, etc., by exercises, massage, and manipulations, and were then supplied with retentive apparatus to enable them to walk with their feet in good position.

One case of extreme palsy of the shoulder was benefitted

by an apparatus that enabled him to fix that joint in various positions and so better avail himself of those muscles of the forearm that remained active.

In only 12 feet was any open operation thought necessary. Tendon transplantation or tenoplasty was performed 8 times and arthrodesis 5 times. Details of these operations are given below.

CASES OF TENOPLASTY AND ARTHRODESIS.

CASE I.—H. W., aged 14; was admitted to the National Orthopædic Hospital on November 1, 1897. He was attacked



Alice P. Aug. 1900. Inner side of leg and foot, operation scar is exaggerated.

by infantile paralysis when 8 months old, the right leg being affected. No further details of history obtained; the right lower limb was 2 inches shorter than the left, and he had talipes calcaneo-valgus of the right foot, and the whole limb was

smaller than its fellow. The hamstrings and ilio-psoas acted well; the right quadriceps was rather weak. Below the knee only the peronei longus and brevis, and perhaps the extensor minimi digiti were capable of voluntary action. Nicoladoni's operation was performed; an incision was made along the posterior border of the fibula for some 3 inches, curving inwards below across the tendo Achillis about $1\frac{1}{2}$ inch above its insertion. The flap was turned up and the two peronei tendons exposed; they were then divided subcutaneously below the ankle and their ends pulled up into the wound. The tendo Achillis was then divided and its lower end split transversely; the foot being held in a position of equino-varus and the peroneus longus tendon well drawn down, the peronei were laid between the flaps of the tendo Achillis and securely sutured with kangaroo tendon. In February, 1898, this patient was recorded as having good voluntary extension-power. When seen about a year later, however, he had lost ground somewhat, probably owing to neglect of exercises. Still, he was much improved.

CASE 2.—Bessie B., aged 6; was admitted on March 28, 1898. She was attacked with infantile paralysis when 2 years old; she went to bed well and was found to be paralyzed in both lower limbs in the morning; she recovered power in the right limb in the course of two or three months but the left remained badly palsied; it is $1\frac{1}{2}$ inch short. She has now talipes calcaneo-valgus of the left foot; there was no voluntary power over the flexors of the toes or the extensors, except some power in the extensor proprius pollicis. The tibialis anticus and the peroneus longus acted well. There was very feeble voluntary action of the muscles forming the tendo Achillis; there was no knee-jerk on the left side. A similar operation to that in Case 1 was performed. In the spring of this year the patient was seen; the operation had been almost too successful; there was no calcaneareous deformity, but the foot was somewhat inverted owing to the action of the tibialis anticus. There was good extension-power.

CASE 3.—Ethel S., aged 16; was admitted on May 24, 1898. The paralysis was believed to have come on between 2 and 3 years of age; there was talipes calcaneus of the left foot and

very slight valgus, the leg being 1 inch shorter than the right; the short flexors of the toes and peroneus were the only active muscles below the knee. Nicoladoni's operation was performed with catgut sutures and the wound supplicated; the result in 1900 was found to be good; since then the use of catgut in these cases has been discontinued.

CASE 4. Francis C., aged 7; admitted September 4, 1899, for paralysis of both limbs dating from 1 year and 10 months previously. The right leg showed a flail-like foot, all muscles except extensor communis digitalis being paralyzed; the left foot showed talipes calcaneo-valgus with paralysis of the tibials and tendo Achillis. Nicoladoni's operation was done with silk sutures. Arthrodesis was performed on the right side.

CASE 5.—Harold W., 5 years; admitted October 12, 1899. Dropping of the left foot was noticed suddenly when 2 years old. On admission there was talipes varus of left foot, with $\frac{1}{4}$ inch shortening; palsy of the extensors of the toes and peronei: operation. The distal end of the peroneus longus was inserted into the tendo Achillis, and the extensor communis digitorum into the tibialis-anticus.

CASE 6.—Ruth S., aged 15, was admitted in 1900, with right talipes, equino-valgus, and $\frac{3}{4}$ inch of shortening. Nothing had been noticed until the patient began to walk; there was palsy of the flexors of the toes and tibialis posticus; the peronei were inserted into the palsied tibialis posticus.

CASE 7.—Alice P., aged 14; was admitted in 1900 for talipes equino-valgus of right foot with $\frac{1}{2}$ inch of shortening; she had had a sudden attack at 2 years of age, ascribed to "teething," and accompanied by pain and uselessness; paralysis of the tibials and weakness of the flexors of the toes was found. The operation was the same as in Case 6.

Case 8.—William C. B., aged 22; was admitted in July, 1900; the paralysis came on gradually when 3 years old; there was left talipes valgus, and $1\frac{5}{8}$ inches of shortening; there was paralysis of the anterior and posterior tibialis and weakness of the extensors of the four outer toes; some feeble voluntary power over the gastrocnemius and soleus muscles was present; the knee-jerks were absent on both sides; Nicoladini's operation was performed.

In 4 cases arthrodesis of the ankle was performed, and in one of these the knee was also stiffened. Case 8 was only operated upon a fortnight ago and nothing can be said as to results. The other cases were all benefitted and the results may be described as encouraging, although it is, in many cases, difficult to say how much of the improvement is due to the removal of the deforming muscle and how much to the newly-constituted muscle or muscles, also in the cases of calcaneus a good deal of the improved plantar flexion-movement is due to the flexors of the toes when these muscles are not palsied. The cases were all first treated by the correction of all contractions, as far as possible. and all were sent out of hospitals with instruments to support the joint.

MODIFICATION OF MILK.

Dr. TOWNSEND sums up as follows:

1. The modification of cow's milk, with a knowledge of the percentages, is preferable to the guesswork feeding of infants.
2. Percentage feeding can be carried out by a milk laboratory or by home modifications.
3. Milk laboratories are unavailable to many by reason of their absence or on account of the expense.
4. Laboratory modifications do not, in the experience of the writer, agree with infants as often as home modifications.
5. Laboratory modifications are necessarily subjected to more handling and transportations than home modifications.
6. Milk that is fresh, clean, and from cow's free from tuberculosis is preferable uncooked, or, in other words, pasteurization and sterilization, although sometimes essential, are to be avoided if possible.
7. The method of home modification and of calculating percentages should and can be made extremely simple, and such modifications are sufficiently accurate and uniform.
8. The addition of cereals to the milk, in the form of barley or oatmeal water, is generally advisable after the seventh month, and, is desirable, before that age in some cases, as an aid to the digestibility of the milk.—*Boston Medical and Surgical Journal*.

EDITORIAL COMMENTS

**"Municipal Regulation of the
Spitting Habit."**

In the *Journal of the American Medical Association* for October 20, 1900, an unusually valuable and practical article with the above title appeared. The author is Dr. Elmer B. Borland, of Pittsburgh, Pa. The paper was originally presented to the June meeting of the A. M. A., at Atlantic City. In the interests both of hygiene and ordinary decency we think that those of our readers who may not have chanced to see it will be glad to read the following quotations:

"During the past year the writer has been in communication with the boards and bureaus of health of twenty-two principal cities of the United States. The following were the four principal questions asked:

1.—Have you a special spitting ordinance? 2.—If you have not do you intend to restrict spitting under your general nuisance act? 3.—Date of your special ordinance or order forbidding expectorating on public floors and sidewalks. 4.—Result of enforcement.

"An analysis of the replies gives the following information: Special laws have been enacted in one-half of these cities and about one-fourth are regulating partly or wholly under their general nuisance act. These ordinances empower bureaus of health to abate or prohibit anything of an unsanitary character; indiscriminate spitting is included.

"In the past five years, New York and Brooklyn, Newark, Columbus, Cleveland, San Francisco, Pittsburgh, Washington, D.C., Rochester, New Orleans, Louisville, and Baltimore have enacted laws.

"The Boards of Health of Chicago and St. Louis have contented themselves with suggestions to the public, mainly through signs placed in street-cars.

"The Boards of Health of Philadelphia and Boston are doing good work under their general nuisance acts.

"The Bureaus of Health of Detroit, Buffalo, and St. Augustine are not in the working line. Hopes may be entertained for the two former, but alas, St. Augustine! Poor St. Augustine! This ancient landmark answered the writer's inquiries thus: 'Our native people would consider such an order an insult to their dignity. Cannot stop a Florida cracker from spitting.' May we interpret from this answer that these people love darkness rather than light?

"Many superintendents of bureaus of health do not seem to realize that they can regulate spitting under their general nuisance act. Others do not have backbone enough to promulgate and enforce an order. Special ordinances, however, attract the attention of the general public and are probably more easily enforced.

"New York and Brooklyn are under one law, with a maximum fine of \$500, or one year's imprisonment. Newark has one of the best special laws yet enacted. It has been tested and sustained by the court. The offender was convicted and the fine imposed. The ordinance is as follows:

Whereas, expectorating in street railway cars or other public conveyances, or in any public building, is deemed by the Board of Health of the City of Newark to be prejudicial to the health of its citizens: Therefore, be it ordained by the Board of Health of the City of Newark as follows:

Section 1.—No person shall expectorate upon the floor or any part of the interior of any street railway car or other public conveyance or any public building in the city of Newark.

Section 2.—Any person who shall violate the provisions of this ordinance shall be fined for the first offense ten dollars (\$10) and for the second and any subsequent offense twenty-five dollars (\$25).

Section 3.—Officials in charge and control of street railway cars or other public conveyances, or of any public buildings, shall post and keep posted in a conspicuous place one or more printed notices of the provisions of this ordinance prohibiting expectoration, and the conductor or conductors of any such cars or other public conveyances, and the janitor or persons in charge of any public building, shall call the attention of all

violators of this ordinance to such notice, and shall report any violations thereof, with a description of the persons offending against this ordinance, immediately to the Board of Health of said city, and any such person failing to post the notices required by this section, and to make the report herein provided for, for failure to do so shall forfeit and pay a fine of five dollars (\$5.)

Section 4.—This ordinance shall take effect immediately.

“The courts of Newark and San Francisco have sustained their anti-spitting laws. The offenders were convicted and the penalties imposed. A millionaire was convicted by the superior court and the judgment sustained by the supreme court of California. He paid his fine of \$25 and served one day in jail. Attorneys interested can secure data of the above cases by writing to the clerk of courts in either of the above-named cities.

“The decision of the supreme court of California has established the fact that the passage of anti-spitting laws is a proper exercise of police power of the city. The entire Board of Health of San Francisco is composed of physicians, which probably accounts for the efficient work recently accomplished.

“Men without scientific training or special fitness are frequently placed—by corrupt politicians—in charge of bureaus of health. The annual reports of these men often read like the minutes of a mutual admiration society, and their work is about as valuable. These reports and the inefficient work are sufficient evidence of the need of placing a medical executive board over all bureaus of health.”

The writer correctly remarks that “New York and Brooklyn are under one law.” This Journal must regretfully add that so far the law has had only an educational influence. Practically no attempt has been made in Manhattan to convict offenders. We are treated daily to the delectable sight of car floors covered with marks of filth, and where in some specially offensive case remonstrance is made to the conductor, he replies in the convenient phrase of the unwilling policeman, “I didn’t see it!” Worse yet, we are even compelled to witness

gross violations of the law by the conductors themselves, the guards on the elevated trains, and the police. It is not a pleasant thing to speak of, but some of the ferry-houses in this city are usually in a condition that may be fairly termed shameful, and if it were not treason, we might intimate that the floors of the Department of Health itself are not always in the most exemplary state.

This is the more to be ashamed of when the remedy is so ready. Let the Health Department announce that from a certain date the fine will be rigidly imposed. Let two dozen policemen be detailed, for two weeks after the date set, to ride on the cars promiscuously and arrest offenders. Let the law be further strengthened by an additional regulation making conductors and other responsible officers who fail to notice a violation of the ordinance punishable for misdemeanor. If this were kept up for a month such a reform would come about as would exceed the wildest dreams of those advocating the measure. Two years of rigid persistence in the same course would have a marked influence on the number of reported cases of tuberculosis and acute infectious diseases, and we should by that time be wondering how we were ever able to condone or endure such a simulation of the pig-sty as now confronts us on every trolley-car.

B.

CLUBBED FINGERS.

Sickly, pale children with clubbed fingers may have chronic bone disease, or bronchiectasis, or congenital heart trouble, but, in the great majority of instances, there is an empyema, and hence the necessity of always carefully examining the lungs in this class of children.—*International Journal of Surgery*..

BRITISH MEDICAL ASSOCIATION MEETING AT
IPSWICH.

Third Day's Proceedings, August 13, 1900.

Discussion on Enlargements of the Spleen in Children.

Opened by SAMUEL WEST, M.D.

THE child is subject to the same enlargements of the spleen as the adult, but with a frequency which varies according to the degree to which they are exposed to the common exciting causes. In childhood growth is active; this presumes active growth in the blood and blood-making organs to keep pace with the general demands of the body. Active growth implies instability of structure, so that slight causes may produce great disturbing effects.

We might therefore *a priori* expect that children would be subject to enlargements of the spleen of a kind and with a frequency uncommon in the adult. Besides this, enlargements of the spleen are more easy to detect in the child.

In what now follows I shall address myself to enlargement of the spleen as it is met with in children, drawing attention to the points in which adults and children differ, and finally dealing fully with the forms of splenic enlargement which are more or less peculiar to children and infants.

The Specific Fevers and Septic Diseases.

In all alike post-mortem observation proves the spleen to be almost without exception enlarged, though it is by no means always easy to demonstrate this enlargement during life.

I do not know that there are any post-mortem statistics to prove that enlargements of the spleen are more common in these fevers in the child than in the adult.

Malaria.—Malarial enlargement of the spleen in this country is certainly rare in children, for ague is rare; but not so in countries where malaria is common. It may then be found where there is little or no evidence of definite malarial attacks.

Leucocythemia.—Leucocythemia is usually met with in the middle period of life and is comparatively uncommon in children and very rare in the young; yet well-marked instances have been recorded in infants of a few weeks, e.g., eight to ten weeks.

Hodgkins' Disease.—With Hodgkins' disease the difficulties are greater but they arise chiefly from the indefinite character of the disease itself. Hodgkins' disease occurs fairly frequently in children but is very rare before the age of eight years, and is, I believe, unknown in infants.

Regarded as the cause of splenic enlargement the difficulty of diagnosis with Hodgkins' disease is not nearly so great as it appears, for the spleen becomes enlarged, as a rule, only subsequently to the enlargement of lymphatic glands in general, so that there is this general glandular enlargement to assist the diagnosis.

Tubercle.—The spleen is almost the favorite seat of tubercle and rarely if ever escapes when tubercle is disseminated either in the acute or chronic form.

In the chronic form the enlargement may be considerable for the spleen may be stuffed with caseous nodules as large as a cobnut.

Syphilis.—Syphilitic enlargement of the spleen is of clinical importance in one class of cases only, viz., that of infants and very young children.

All that has hitherto been said has been somewhat of a preliminary and introductory nature leading up to the important subject which we have now more especially to consider, viz., that in which the enlargement of the spleen is associated with profound anemia and which is usually named splenic anemia.

The name is unfortunate for two reasons: first, that it seems to imply or assume what really is not yet proved, that the anemia in some way depends upon and is caused by the affection of the spleen; secondly, because the same term is applied to two entirely different clinical affections—the one a rare disease affecting adults only and only very rarely children and, so far as I know, not recorded at all in very young children and infants; the other, a not uncommon disease to which

infants are especially liable, though it may continue from infancy through the first two or three years of life.

In either case splenic anemia has many synonyms, e.g., splenic cachexia, splenic pseudo-leucocythemia, lymph adenoma splenica, spleno-megalie primitive, and many others, names which on the one hand indicate the difficulties of diagnosis, and, on the other hand, how much there is to be learnt as to the real nature of the disease.

If the term splenic anemia be obtained we must distinguish the two groups as splenic anemia of the adult and splenic anemia of the child.

A.—Splenic Anemia of the Adult.

(Spleno-megalie primitive).

I do not think it necessary in this connection to enter into any description of these cases, for they are so rare in children.

B.—Splenic Anemia in the Infant.

The nature of the case is plainly indicated by the peculiar anemia and the enlargement of the abdomen. The anemia is profound and pallor very striking; the complexion has a peculiar, waxy, ivory-like color, with a tinge of olive-green in it, which is very characteristic. The abdomen is tumid and the enlargement of the spleen often obvious to the eye.

The child is usually not emaciated and may be plump, but is very feeble. The blood shows no changes but those of simple anemia, and there is little or no general enlargement of the lymphatic glands.

The child is brought under observation usually on account of its ill-health, weakness, or pallor; occasionally on account of respiratory catarrh, or gastro-intestinal disturbance, or some other accidental complication, but only rarely because the abdomen is enlarged.

Most of the other symptoms are accounted for by an extreme anemia.

The splenic enlargement is easy to make out; it may be enormous, so that the organ may extend forward beyond the umbilicus and downwards as far as the anterior superior iliac spine. It moves freely on respiration, is smooth on the surface, and even when much enlarged is not tender to palpation.

The changes in the blood are those of simple anemia, the

cells being greatly reduced in number but retaining their relative proportion to each other. The number of red cells may fall as low as 40 per cent. of the normal; if below this the result is almost invariably fatal. The red cells retain their normal amount of hemoglobin, though some writers maintain that it is reduced as in chlorosis. Nucleated red cells and megalocytes are often present in small numbers, but the eosinophile cells do not vary.

If there be any increase in the number of white cells it only affects the lymphocytes, and this stands in direct relation it appears with the fever,

Course, Duration, Prognosis.

The affection commences almost invariably in infants and very young children, and when discovered for the first time in older children has, in all probability, dated from infancy.

The liability of the sexes is equal. The affection runs a chronic course, lasting some weeks, but in the end many cases get quite well; but on the ultimate prognosis very varying opinions are held by different writers.

Treatment.—The treatment is that of anemia, and consists of good food, plenty of light and air, cod-liver oil, hypophosphites, iron, and similar remedies.

Quinine is useful in malarial cases, mercury and iodide of potassium in syphilitic cases, but the specific remedies, especially mercury, do no good and are even actually harmful when the specific cause is absent. Arsenic is also a favorite remedy but is far inferior to iron.

The association of enlargement of the spleen with rickets and syphilis has already been mentioned and it is important to consider the relation in which these conditions really stand to one another.

Syphilis.—Enlargement of the spleen is almost constant in active syphilis in the child. Among infants with congenital syphilis it is found in at least 50 per cent. and a yet larger percentage among still-born syphilitic fetuses.

The association of syphilis with enlargement of the spleen is, as already stated, held by many to be unfavorable, and it is only in the syphilitic cases that anti-syphilitic remedies do good.

Rickets.—No doubt the two conditions are often associated, but the figures given by different authors vary.

On the other hand, the enlargement of the spleen is not constant in rickets.

Finally there is no relation between the degree of rickets and the size of the spleen.

Further, it must be borne in mind that most of the children of the poor attending hospitals are rickety, irrespective of what complaint they present themselves for.

The facts, then, bearing on the relations between syphilis, rickets, and enlargement of the spleen, appear to be these:

1. That syphilis is occasionally and rickets frequently associated with splenic anemia.
2. That in neither case is the association constant.
3. That they are, neither of them, the sole cause and are probably not the cause at all except perhaps indirectly by means of the ill-health to which either leads.

Another question of interest remains, viz., the relation which exists between the anemia and the splenic enlargement.

There are three possible alternatives: (1) The enlarged spleen may be the cause of the anemia; (2) The anemia may be the cause of the enlarged spleen; (3) Both the anemia and the splenic enlargement may be joint results of some common cause.

If neither of the earlier explanations be correct it would seem to follow that the third explanation must be the true one viz., that both conditions depend upon one common cause. It may be, as some hold, that any condition of the health serious enough to lead to profound anemia in infants may be associated with splenic enlargement. If this be true, it would follow as a corollary that when the health is cured the splenic enlargement would disappear. At the same time there are many objections to so wide a view as this, and it follows that if there be a common cause we do not yet know what it is.

The points to which I would specially draw attention in the discussion are:

I.—In the splenic anemia of infants:

- (a) to its course and duration.
- (b) to its prognosis as regards life and recovery.
- (c) to the relation in which it stands to—

1. Rickets.
2. Syphilis.

- (*d*) to the relation in which the enlargement of the spleen and the anemia stand to one another.
- (*e*) to the treatment.

II.—In other forms of splenic enlargement in children, to the frequency in the very young of—

- (*a*) Malaria.
- (*b*) Leucocythemia.
- (*c*) Hodgkins' disease.

DISCUSSION.

DR. GOSSAYE (London) quoted some cases in children where there was a slight leucocytosis with splenic anaemia. The leucocytes were increased to 30,000 per m.m., as found by Dr. Hayes, house surgeon at the Shadwell Hospital, and the increase affected eosinophile cells as well as lymphocytes. There were also a very few myelocytes. One of the cases died and showed simple hyperplasia of the spleen. In his experience syphilis was a commoner cause than Dr. West considered. Some cases of splenic anaemia occurred without pre-existing syphilis or rickets. His experience of the prognosis coincided with that of Dr. West; the majority of cases in children recover after a shorter or longer interval. The anaemia was not proportional to the splenic enlargement.

DR. R. MURRAY LESLIE (London) did not quite understand the distinction between splenic anaemia in the adult and in the infant. The symptoms described by Dr. West appeared in the main to apply to both conditions.

He described a case recently under his own observation, and referred to the irregular pyrexia, the profound anaemia with earthy pallor, the enormously enlarged spleen and other symptoms so characteristic of the condition. He was of opinion that the anaemia and splenic enlargement had no causal relationship, and that it was much more probable that there was a common cause at present undiscovered which would account for both conditions. Rickets and syphilis probably simply act as predisposing causes by injuring the general health.

He also asked whether Dr. West had known any cases oc-

curing in children such as occasionally one meets with in adults where we have all the features of this disease, including the enormous enlargement of the spleen, with little or no anaemia. He had published two such cases in 1893 in the Edinburgh Hospital Reports, under the name of oligocythaemia.

DR. FISHER (Bristol) spoke of the liability of the spleen to enlarge in children, but post-mortem one did not so often meet with enlargement as clinical experience would lead one to expect. The variability in the amount of the enlargement in typhoid fever was very remarkable. Enlargement was said to be universal in typhoid fever, yet he had found a spleen weighing $2\frac{1}{2}$ ounces in a patient aged nineteen years.

In pneumonia great enlargement of the spleen might occur. He had seen a spleen weighing 30 ounces in such a case in an adult.

Splenic anaemia, he thought, a rare disease. He could not remember more than six cases in a very large out-patient experience.

DR. JOHN THOMSON (Edinburgh) agreed with previous speakers as to the large proportion of recoveries. In slight cases it might be difficult to be sure of the diagnosis; but he had seen some severe cases recover and remain well eight or nine years afterwards.

He thought the amount of anaemia more important than the size of the spleen in prognosis.

As to the proportion of enlarged spleens met with in syphilis, he asked whether that referred to enlargement at the time the case was first seen or to enlargement occurring some time in the course of the case. He examined notes of eighty-three cases of congenital syphilis and found that only 20.48 per cent. had enlargement of the spleen when first seen.

Rickets.—His impression was that the percentage of rickets was very great, although he could not give statistics.

He had seen a number of cases of enlargement of the spleen in twins.

As to treatment, he thought that the improvement of the general health, and thereby of any underlying condition, was very important.

DR. FISHER said that Dr. Thomson's remarks reminded him that he had seen two cases of splenic anaemia in brothers.

DR. F. TAYLOR said that his impression was that the prognosis was fairly good, but many cases were lost sight of after undergoing some improvement.

He had seen, some years ago, a record of a family case, a number of members of the family being afflicted. He could not help thinking that there must be some underlying cause, toxic or other, in such cases.

DR. WEST, in reply, said that he felt that there was a difficulty in the nomenclature of cases. In some ways a new name was an assistance, because it led one to look out for differences between cases. But there was a tendency at present which he thought a disadvantage, to use names in a general sense, and to include under one term conditions essentially different. He instanced the vague use of the terms hyperpyrexia and tachycardia, and said that he thought the term splenic anaemia was also a case in point.

As to Dr. Murray Leslie's question, he thought it very difficult to express in words the difference between splenic anaemia in the adult and in the child; but he thought that there was a difference clinically. The different prognosis itself was important, for in the adult practically every case dies.

The only pathological change he knew of was an alteration in the malpighian bodies which underwent a peculiar fibrosis.

He thought statistics of small enlargements of the spleen were to be taken with reserve, because some writers seemed to think any spleen they could feel was enlarged, even if it were only palpable when the patient took a long breath. It would be better to include only those where the spleen could be felt in all stages of quiet respiration.

As to the blood changes, one must remember that the corpuscles undergo modifications in number and form in many conditions, and we could not regard the occurrence of slight changes as of much value, at any rate so long as observers differed as to the nature of these.

The occurrence of family cases, he thought, might be due simply to the influence of common surroundings.

PAPERS.

DR. J. H. NICOLL (Glasgow) communicated a paper on **Congenital Hypertrophic Stenosis of the Pylorus**, with an account of a case successfully treated by operation. (See current issue).

DR. JOHN THOMSON (Edinburgh) said that he had seen six cases of the kind, of which three he had already published. Of the three remaining, one aged seven weeks, died without being operated upon, owing to great weakness and emaciation. The other two, an infant of twenty-three days, and another of five weeks, were both operated, but in both cases death occurred shortly afterwards.

If stretching of the pylorus should prove to be a sufficient measure of relief, he thought the prognosis of operations would be better.

DR. NICOLL, in reply, said he agreed that stretching of the pylorus was less severe than the usual operation, and might be found to be an advance upon the present methods of treatment.

FOREIGN PEDIATRIC JOURNALS.

**Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the Charge of George Alexander Saxe, M.D., New York.**

The Bloodless Operation for Congenital Dislocation of the Hip. By Dr. ADOLF LORENZ, Vienna.—This method is to be preferred to the bloody operation, because the latter gives from 2 to 10 per cent. mortality, and often results in ankyloses, or contractures, demanding secondary operations of a complicated nature. The injury to the Y cartilage may also be followed by arrest in the development of the pelvis. Mechanical treatment with various kinds of apparatus is not satisfactory, for it is slow, and does not give good results. If the bloodless method does not succeed we may employ the bloody operation, but leave the acetabular cavity intact, and continue the after treatment with the same measures as are used after the bloodless operation.

Treatment of Congenital Luxations of the Hip. By Dr. E. KIRMISSON, Paris.—Neither the bloody nor the bloodless methods give complete satisfaction, and the question of the treatment of these dislocations has by no means been solved as yet. The writer proposes that the treatment be instituted at a very early age, in fact as soon as the diagnosis has been made, say at eighteen months to two years. The deformity is overcome gradually by constant traction in slight abduction by means of apparatus modeled after those used in the treatment of hip disease. The author has obtained a series of very good results by this method, and believes that the future will show that this is the correct treatment for congenital dislocation of the hip. If after a few years, the result is not satisfactory, one may employ one of the other operations.

The Bloodless Method of Operation for Congenital Dislocation of the Hip. By Dr. A. BROCA and Dr. A. MOUCHET, Paris.—The writer treated 62 cases of this deformity by means of the bloodless operation. Of these 38 were unilateral and 24 bilateral. Two cases were failures; one a child aged 12, the other 14 years. The best age at which to operate is between 2 and 6 years. The unilateral luxations are more easily reducible than the bilateral ones. The results are therefore very favorable. In the number reported, 25 results were satisfactory, and 13 excellent.

Contribution to the Study of the Anatomy of the Congenital Hip Dislocations by Means of the Roentgen Rays. By Dr. M. FROEHLICH, Nancy.—The writer concludes from a personal observation of 21 cases that radiography furnishes an important aid in the diagnosis of these conditions.

and that the Baci-Lorenz operation is a good method of treatment in congenital luxations of the hip. It must be noted, however, that the operation is successful only between the ages of $1\frac{1}{2}$ and 4 years, and that between one and four years of after treatment are required in order to obtain the functional results desired.

Congenital Luxation. By Dr. CALOT, Berck.—Prefers the bloodless method when reduction can be accomplished thereby. This may take place until the age of 8, or possibly 10 or 12 years. Six to twelve months of active after treatment are necessary, but after that the child is allowed to go without any apparatus and is given regular massage and trained to walk in the proper way. The bloody method may be used in irreducible cases.

Second Question—Treatment of Pott's Disease.

1. Dr. BRADFORD, Boston. Treatment of Pott's Disease in the Stage of Kyphosis.—If a deformity already exists, the treatment should consist in: (1) Correction of the existing curvature; (2) Prevention of development of other deformity; (3) Arrest of the growth of the existing curvature. Slow reduction may be applied as long as there is no ankylosis; but if there be a bony growth, forcible reduction may become necessary. Forced reduction is not without dangers, but this is not so bad if proper judgment be used in its application. This method is quite frequently employed in the treatment of paraplegia due to Pott's disease. When much force has to be used in correcting the deformity, and when the bone must be broken, forcible correction is not to be recommended.

2. Dr. A. BROCA and A. MOUCHET. The Treatment of Pott's Disease.—The writers have used forced reduction in 46 cases (28 girls and 18 boys) according to Calot's original method, with a diminution in the force used. The cases included chiefly dorsal curvatures. The presence of abscesses of pronounced cachexia, or of pulmonary tuberculosis, constituted, for the writers, contradictions to the use of forcible reduction. Sayre's plaster of paris jacket was applied while the patient was under chloroform after the gibbosity had been reduced. The patient was kept on his back two or three months, and was not allowed to walk until twelve months after the operation.

Forced reduction may be dangerous if kyphosis is of long standing and already ankylosed; at all events the forced procedure is of no avail in such cases. If the kyphosis is recent, rapid reduction is not indicated; the patient must be anesthetized and Sayre's jacket must be applied in the suspended position.

3. Dr. CALOT, Berck. The Treatment of Pott's Disease.—Dr. Calot believes that the policy of "do nothing" is wrong, and that the policy of continuous and persistent treatment should be substituted. The results of forcible reduction are not always perfect, especially when one has to deal with kyphoses; but the average results are far better than those obtained by the old "leave well enough alone" methods.

4. Dr. LOUIS MENGIERE, Reims. A Contribution to the Study of Forcible Reduction in Scoliosis.—The following rules must be observed: (1) Old cases of scoliosis, with too pronounced deformity, too much ankylosis, must not be treated by forcible reduction; (2) Scoliosis, with a certain degree of ankylosis, however, may be so treated; (3) The reduction must be undertaken in successive, periodic sittings, repeated every three or four months. The machines employed must be furnished with a dynamometer, and must permit of gradual reduction of the curvature. The advance gained at each sitting is maintained by the writer's special fixation apparatus. (4) Massage and gymnastics must be used for a long time to maintain the results thus gained.

Third Question—The Treatment of Appendicitis.

Dr. ROUX, Lausanne. Therapeutic Indications in Appendicitis.—The following rules hold good in appendicitis: It is more important to know what not to do in these cases than what to do. Purgatives should be avoided in all cases throughout the course of the disease. Instead small enemas only reaching to the ampulla of the rectum must be substituted, even in convalescence. The patient must not be transported anywhere if possible. The intestine must be immobilized by opium, preferably given by rectum. In order to avoid paralysis of the intestine and bladder the patient may be given at the beginning a hypodermatic injection of morphine. Absolute fasting must be insisted upon for the first few hours. Later, thirst may be quenched by a little water on the tongue or by small saline enemas. Occasionally, if very distressing thirst be present we may give subcutaneous saline injections. Cautious applications of ice or of lukewarm cloths wrung out of water may be used. The indications for operation: Seventy-five per cent. of deaths from appendicitis may be avoided by operating in the interval after the first attack. The same thing is true of cases of so-called appendicular colic if observed by a conscientious physician. During an attack do not operate as soon as the diagnosis is made. If the diagnosis is certain and if we are sure we are in the first twenty-four to thirty-six hours of the attack, operate, for an operation at this time is but little more dangerous than one done in the interval. The diagnosis is, however, rarely made positively at such an early stage unless the patient has had previous attacks and has been warned. In these cases the appendix may be removed. But if the attack has advanced further the conditions are unfavorable to a successful operation, and one must wait. It is difficult sometimes to wait during this period, the intermediate stage, as it is called, because it is then that the alarming symptoms appear. On the fourth and fifth day comes the period of calm resulting from a localization of the trouble; around the appendix the sac of exudate can almost always be felt. In these cases one may either wait if the patient's condition continues to improve and allow the exudate to become absorbed, or, if the symptoms threaten, e.g., high pulse in proportion to fever, vomiting, dyspnea, apathy, etc., the sac must be opened as soon as possible and the appendix may be removed if it is in sight, if not it must be left alone and removed *a froid* after the present attack subsides. If the general condition improves before operation and

continues to be fair, but the fever keeps on and becomes hectic the case should be operated upon. There are also cases in which the surgeon feels that the operation is necessary, simply because he does not like the appearance of the patient—an indefinable state of affairs but a legitimate indication. If we follow these rules it is true we may allow certain cases of septic appendicitis to die, but we will save a large majority of the others.

2. Dr. A. JALAGUIER, Paris. Therapeutic Indications in Appendicitis. In this article the indications for operation are given essentially in the same way as in that of Dr. Roux, which precedes it.

COMMUNICATIONS TO THE SECTION.

1.—Twenty Cases of Vesical Calculi in Children, Treated by Supra-Pubic Incision Followed by Complete Suture of the Bladder. By Dr. MICHAŁOWSKY, Sofia.—Of these cases 22 were children and 6 adults. The patients died, one five days after the operation from a circumscribed peritonitis, the other, on the second day with complete anuria. The writer does not attribute these deaths to the operations. In 23 cases the vesical suture was hermetic. In one case only was he obliged to reopen the bladder. He always leaves a catheter *à demeure* in the bladder for a considerable length of time.

2 Two Cases of Abscess of Vertebral Origin in Young Subjects; Recovery.—Dr. AMERIGO BENEVENTO DA ROTELLO, Campobasso. In the first case the abscess pointed in the outer aspect of the left thigh and originated in the first lumbar vertebra. The second case was that of an abscess originating in the third or fourth lumbar vertebra and pointing in the left lumbar region. The abscesses were opened and drained. In the second case injections of iodide and potassium iodide were also used. The writer recommends large incisions in such cases instead of palliative treatment and aspiration.

3. Mastoiditis in Children. By Dr. MENIERE, Paris.—Mastoiditis as a sequel of acute otitis is more rare in children than in adults. As a complication of purulent otitis media it is more frequent in children than in adults. In spite of the fact that many cases of mastoiditis in children are benign in character the writer believes that if ordinary antiseptic treatment fails it is necessary to remove the ossicles that are the seat of caries and keep up the suppuration, and if this does not succeed the mastoid must be trephined at the point of election. This radical treatment is necessary because mastoiditis in children goes on without prominent symptoms and it is difficult to make an early diagnosis.

4. The Dangers of a Narrow Prepuce in Nurslings and the Means of Correcting this Defect by Dilatation. By Dr. R. SAINT PHILIPPE, Bordeaux.—The writer recommends dilatation of phimosis in preference to the bloody operation, especially in young children.

5. A Contribution to the Study of Empyema in Children. By Dr. BEZY and Dr. BAUDY, Toulouse. The writers reported three cases of empyema in children, and called attention to the difficulties of diagnosis in such cases.

PEDIATRICS

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ORIGINAL ARTICLES

XERODERMA PIGMENTOSUM.*

By BERNARD WOLFF, M.D.,
Atlanta, Ga.

XERODERMA PIGMENTOSUM while a rare disease is no longer a novelty. Since it was first identified and elaborately described by Koposi, in 1870, something less than a hundred cases have been reported by observers in different parts of the world. Instances of the disease to the number of sixteen or eighteen have been recorded in the United States. Xeroderma pigmentosum is, however, not widely known and a knowledge of its characteristics is not sufficiently general among the profession to insure an immediate recognition of it by description or by sight. For this reason it is likely that there are many cases of xeroderma pigmentosum scattered about the country unidentified or masked by an erroneous and misleading title. This is due to no lack on the part of those who have encountered the disease to aid in the dissemination of knowledge concerning it. The assertion may be hazarded that every recognized case has been reported and probably, to proceed further, some have been tagged xeroderma pigmentosum when the resemblance was fanciful, vague and unestablished. In all important essentials the disease has

* Read by title before the Tri-State Medical Society of Alabama, Georgia, and Tennessee, October, 1900.

been thoroughly worked up and the resultant may be found more or less abundantly set forth in any dermatological treatise, notably those of Kaposi, McCall Anderson, or Radcliff Crocker.

A perusal of the literature of xeroderma pigmentosum discloses certain salient features of the disease common to all cases of it, which here may be appropriately enumerated.

Xeroderma pigmentosum is a family disease, that is, it is prone to affect several members of the same family, showing a preference for those who are of the same sex. It is not



Case I.

hereditary, nor is it congenital. It usually appears in the first year of life and during the summer or late spring. Exposure to the sun's rays has not been demonstrated in a causal relation, though there can be little doubt of its influence. The disease in its onset, course, and special features is very constant and when developed can scarcely be mistaken for anything else.

There are three fairly well defined stages in the evolution of the disease. In infancy, as a rule, or very early childhood, there appear on the face and hands of the person affected numerous freckle-like maculæ, varying in size from a pin's head to that of a lentil. The freckles are first brown, later on they



Case II.—Xeroderma Pigmentosum.

become much darker, approaching sepia or black in color. There may or may not have been a preceeding stage of erythema. This may be all that is evident to the eye at this stage. It may be seen fairly represented in the picture of the baby marked Case I. There is but little change in the character of the lesion at this period, but there is a gradual extension of the pigment spots to other regions of the body—the neck, the chest, shoulders, and lumbar region. The skin elsewhere is normal.

The alteration in the appearance of the disease is gradual but steady. The freckles become more numerous and more closely aggregated and soon it is noticed that there are arborescent and punctate telangiectases showing among the spots of pigment with here and there small pinkish areas in the skin which later become white. This marks the beginning of the angiomatous and atrophic stage. It may be seen on the face and extremities of the boy whose picture is here shown. These trophic disturbances are progressive. The atrophy becomes more marked as the disease proceeds. The facial orifices become narrowed, giving to the nostrils and lips the pinched appearance seen after the healing of the lesions of lupus. The lower lid is drawn down, producing ectropion with its attendant evils. In the case seen photophobia was very marked, though there was as yet no diminution in visual acuteness. At about this period in the evolution of the disease develop those phenomena which menace life. The xerodermatous skin becomes the seat of malignant new growths, which may bring life to a rapid and miserable close, or they may persist for years and effect their malign purpose more deliberately.

These outgrowths partake of the character of the several types of cancer without adhering constantly to any one. From an unsatisfactory examination of a decomposed fragment of tissue sent me by the father of the child from whose face it was taken, I judge it to be epitheliomatous in character. The neoplasms are exulcerous, tubercular, papillomatous, fungoid. The last are exuberant, incompletely pedunculated, and of the consistency of freshly formed blood-clot.

The skin resembles somewhat the condition of keratosis, seen in old people of the blonde type—rough, scaly, mottled, and livid; or it may be atrophied and rigid, as in the atrophic stage of lepra, or in scleroderma circumscriptum.



Case II.

Xeroderma pigmentosum has points of contact with the infectious triad, syphilis, tuberculosis, and lepra, but its intervals of separation are too wide to admit a theory of identity with any of the three. It is a profound disturbance of the nutrition of the skin rendering it vulnerable to reactionary influences toward which the normal integument is indifferent. Despite careful and repeated analytical studies our knowledge of the disease has not extended beyond this elementary proposition.

The duration of the disease varies with the intensity of the malignant changes and the resistance of the patient. McCall Anderson's case was rapidly fatal. Brayton's case, twenty years after, is still alive and fairly comfortable, though blind. The treatment is very ineffectual; amelioration of symptoms is the most that can be expected. As regards the new growths surgical interference is justifiable, on the ground of prolonging life. Salicylic plaster, Fowler's solution, and the so-called cancer caustics are indicated; antiseptic drying and dusting powders, attention to the eyes, are further required in the treatment.

In May, 1900, a boy, aged 6 years, was brought me by his father, a small farmer residing in South Carolina, for advice concerning a peculiar disease of the skin with which the boy and two other children (a girl aged 11, and a boy aged 18 mos.) were suffering. The man had never heard of a similar case in his family. There was nothing vicious in his personal or family history. His wife was a red-haired, freckled, sturdy, and prolific woman of 32. There had been six children, three were normal, three had the disease. Sexual predilection was not followed, as there were two boys free and two affected, one normal girl and one xerodermatous. The father stated that the disease started in each instance in the first summer of life after exposure to the sun and as a sunburn. The sunburn after its primal appearance did not give way till the freckles appeared. He regarded this erythema as the first symptom and had begun to regard it with horror as the mark of Cain. The freckles spread and deepened, the skin thinned and shrunk in places; then followed offensive ulcers and outgrowths, and ophthalmic complications, which were by far the most distressing. The history of the development of xeroderma pigmentosum was complete. The boy was stripped and examined.



Case II.

The face had suffered most. There was no normal skin in this region, except that of the scalp,—a fact that may not be without significance. The freckles were thickly aggregated, light and dark, brown and black. The lips were unnaturally beveled, the nostrils were narrowed, there was ectropion, intense conjunctivitis with photophobia and lachrymation. The boy's face was concealed in the obscurity of a



Case III.

cavernous sun-bonnet to guard the eyes from the light. There was a semi-solid more or less pedunculated tumor the size of a hickory nut on the cheek to the left of the nose. There were waxy areas like the border of an epithelioma in which congeries of dilated vessels were to be seen. The surface of the skin was pricked out with white atrophic spots, as yet quite small. The ears were similarly effected. The neck, front and back were deeply freckled, and showed telangiectases and atrophic

spots. The front of the trunk and thighs was comparatively normal, except for a few light scattered freckles. The skin of the lumbar region was densely freckled. On the upper extremities the skin of the arms was fairly free from the disease. The forearms were profoundly altered—rough, mottled, having the look of *Keratosis senilis*. The fingers were stiff and semi-flexed, palms free from eruption, nails normal. Lower extremities free to knees; the leg was the seat of the disease in its more advanced evolution. There were several small rather offensive tibial ulcers, not the results of traumatism. It was observed as a curious fact that small scratches and abrasions upon the affected skin healed normally. The skin of the feet resembled that of the hands, and was well advanced in the disease, but with its actual state somewhat obscured by the boy having for some time gone barefoot. In general inspection one feature of the case was immediately observable. The parts of the body uncovered and exposed were those most affected. This may be accounted for on the common-sense basis, that an integument, organically defective, exhibits its weakness most where the strain is greatest. It is hardly necessary from this, the simplest view, to seek a cause in any alleged sinister effect of the violet rays of the spectrum, as argued by Unna and a few rarefied pathologists. The course of the disease does not add plausibility to this hypothesis.

The photographs of these unfortunate children illustrate very well the march of the disease. In that marked Case I, the freckling is shown; Case II, the one seen by me, the stage of angiectasis, deepening pigmentation, insular atrophy and beginning carcinomatosis may be seen; in Case III the process has further advanced, and there is shown the partial destruction of the nose and the eye-lid. The general health of all except that of the patient represented as Case III has remained unaffected.



(1) SUPRAORBITAL HEADACHE DUE TO EYE-
STRAIN—(2) NASAL NEUROSIS.*

By SAMUEL G. DABNEY, M.D.,

Professor of Physiology and Clinical Lecturer on Ophthalmology, Otology,
and Laryngology in the Hospital College of Medicine, etc.,
Louisville, Kentucky.

GENTLEMEN: The first case to which I desire to call your attention is a very instructive one. This little girl, E. R., aged 11 years, comes to us complaining of supraorbital headache; she says that reading or studying brings on severe headache and that she cannot bear the light well.

If you look at the child's eyes you will see nothing wrong with them; there is nothing abnormal in the external appearances of the eyes. She is rather small in stature for her age, backward in development, color of her skin markedly yellow; she seems to be poorly nourished, and is anemic. We are told that she cannot attend school on account of the headache from which she suffers; and, in addition to this, we are told that she does not see as well as an average child at this age.

The lesson the case teaches us is simply this: supraorbital headaches, in a very large proportion of cases, are due to eye-strain, especially in young subjects. Defect of sight in this case also interferes somewhat with the child's studies, but even if the sight were perfect, I would have you remember that the cause of supraorbital headache will most likely be the eyes. The practical point is, whenever you have a patient, especially under forty-five years of age, who suffers from headache through the supraorbital region or over the eyes, then you must think of eye-strain as being the probable cause.

In many cases, like the one before us, there is more or less dizziness, and this child says she is often dizzy. Frequently by using the eyes in such cases the patient becomes nauseated, then dizzy. The trouble is an error of refraction. In her case the error is astigmatism, as it most frequently is. I will place

* Stenographically reported for this Journal by C. C. Mapes, Louisville, Kentucky.

this disc, with the narrow slit in it, before each eye while the other is covered. You observe that when the slit is vertical she reads the test letters at 20 feet very well, but when it is horizontal she sees hardly any of them. This test alone is not accurate in examination, but it illustrates the meaning of astigmatism. The vertical meridian of the cornea is normal, the horizontal meridian is far from normal. By an effort of the ciliary muscle acting upon the crystalline lens it can be made to so change its curvature as to compensate for the corneal error and to give perfect vision, provided the error is not too great; but that effort is costly; it involves nervous strain which produces headache.

Dr. Weir Mitchell wrote a paper not long ago giving a brief outline of the way in which attention was first drawn to eye-strain as a cause of headache and other nervous disorders. That paper is an answer to the question we oculists are asked daily: "Doctor, why is it that so many more people wear glasses now? When I was a child nobody except old people wore glasses." Mitchell's paper is a very rational answer to it. It is because within the last half century we have learned that headache and other nervous manifestations are frequently due to strain of the eyes and may be corrected by glasses. Another point to which Dr. Mitchell calls attention is the importance of correcting the eye-strain and thus relieving the headache in children, because we know how susceptible the nervous system is to habit; we know how epilepsy and many nervous troubles will continue sometimes after the cause has been removed. Neurologists tell us this is the chief cause of failure in the treatment of Jacksonian epilepsy, because when a depression in the skull has lasted for a long time the epileptic seizures will continue when the depression has been elevated.

A patient came to my office not long ago complaining that he had been the subject of headache for many years, in fact as long as he could remember, as he was fifty years of age. He said that whenever he used his eyes his headache was greatly aggravated. By the use of proper glasses he was almost completely relieved. The prognosis for that period of life is not so good as it is in younger subjects but even then many cases may be cured by glasses. This shows the importance of correcting eye-strain in the child. We have to combat a great deal of prejudice in this particular, a prejudice which is not

entirely confined to the laity, I am sorry to say. Some very good doctors have said: "I do not see anything the matter with this child's eyes; there is no redness, no pain; the eyes are not inflamed; the child sees like other children, although such and such an oculist wants to put glasses on her."

This child is young, and I believe the trouble will be almost certainly relieved by correction of the eye-strain; therefore we will prescribe proper glasses.

Case 2.—The next patient, J. D., applies to us for relief of a thin, watery discharge from his nose, with frequent attacks of sneezing. He says he frequently has some obstruction about the nose, which soon passes off; but his principal annoyance is the discharge. He appears to be well nourished, rather robust looking, and says he eats and sleeps well. As I look in his nose I see decided turgescence over the right inferior turbinate, narrowing the meatus on this side. I am putting some cocaine into his nose on this little pledget of cotton (saturated with a four per cent. solution) for two purposes; first, to anesthetize it so I can pass a probe in to examine it more carefully; second, to shrink the tissue; the latter is perhaps the most important of the two, because cocaine contracts the capillary vessels and by this method exsanguinates the tissues and makes them contract down on the bone. After I put the cocaine in, if it is a simple turgescence due to dilated blood vessels, it will in a few minutes contract and disappear. But if, on the other hand, it is partly or largely due to hypertrophy of the submucous tissues, then it will not contract or disappear. After leaving the cocaine in contact with the tissues for a few minutes I will again look into his nose to see what the effect has been.

This patient says Dr. Moren, of the neurological department, has been treating him for some nervous trouble. It would be interesting to know more about this. He said that when he applied to Dr. Moren he had a jerking all over his body, and that he has been treated successfully for that trouble. I think there is probably a close connection between this disease for which Dr. Moren has been treating him, and his present nasal trouble. I judge from his description that he had symptoms of some obscure disease of the nervous system. The nasal condition from which he now complains may be ner-

vous in origin. You will see cases of this kind in your practice, and are more likely to see them in young girls who are delicate, pale and anemic, not over twenty-five or under fifteen years of age; you will meet them also in middle-aged women, between forty and forty-five; and they will come to you with just the group of symptoms of which this patient complains; frequent attacks of sneezing, both summer and winter; a thin watery discharge, a tendency to obstruction of first one side of the nose, then the other, with the history that they have to use five or six handkerchiefs per day, etc. The constant use of the handkerchief is a source of serious embarrassment to them. You will find simply a turgescence of the membrane lining the turbinate tissue without any hypertrophy, and with no permanent obstruction of the nose. The condition is really a neurosis. It is due to a lack of tone in those little nerves of which you have often heard, the vasoconstrictor. There is a local lack of tone chiefly by which these constrictors lose their grip too easily, and the erectile tissue of the nose allows them to become distended and pour out this thin watery fluid and give origin at the same time to the attacks of sneezing. The exact pathology is not very clear; it may be local, it may be central; perhaps a combination of the two. There is occasionally some local irritation of the nose; any obstruction that interferes with the proper balance of atmospheric pressure in the two nostrils will help to produce it. Here the septum is regular; there is no hypertrophy and no constant obstruction, so the treatment is simple: It is belladonna, strychnine, arsenic and zinc as a tonic. From this treatment we usually have relief. We nose and throat men do not give many drugs internally. (Most of our work is local, and it is unusual for us to be called upon to prescribe general medication.) However, here is a patient that will not be benefited much by local measures, and we will give him the following prescription for internal use:

℞ Arsenic acid 1 grain.
 Sulphate of strychnine $\frac{2}{3}$ "
 Extract of belladonna.
 Phosphide of zinc, of each 4 grains.
 Extract of gentian, enough to make 20 pills. .

This will give us in each dose $\frac{1}{20}$ grain arsenic, $\frac{1}{30}$ grain

strychnine, phosphide of zinc and extract of belladonna each $\frac{1}{5}$ grain. This tonic pill will usually assist more than anything else in controlling the neurosis. In addition to that I frequently give them some local application, such as menthol. You will notice that all the drugs in the above prescription are directed towards building up tone in the vaso-constrictor nerves.

CARE OF CHILDREN.

There is great opportunity and demand for some medical artist of the pen to paint, in glowing terms, the lot of children as it really is, and it should be.

Even the most loving and well-meaning parents are strangely neglectful of the best interests of their little ones. Very few children are understood or properly managed. They are governed by caprice; the whims and convenience of their elders receiving first consideration. If it were not that Nature is very strong in children, as in all weak, defenseless creatures, few of them would grow up to healthy man- and womanhood.

The old, selfish attitude of parents to children was that of ownership. Such an attitude makes slaves of children, and robs them of their natural rights. Such advantages as they enjoy then come under the head of privilege, indulgences, for which they must pay court to parents and render unquestioning obedience.

The true view of parentage is that of a trust. A child is a little bundle of propensities and inclinations, to be trained to self-government, good and industrious habits. To this end it must have a strong and vigorous body, mental and moral discipline. Comparatively few parents try to fulfill these requirements by any regular system of management.

The great majority of children sleep when and where they can. There is no particular bedtime or nap hour. They eat irregularly anything that comes to hand. Bathing is negligently performed. If they are sensitive to cold, the cause of this sensitiveness—usually an unhealthy skin or lack of hemoglobin in the blood—is not sought and treated, but the child kept close in the hot, stuffy house, and loaded down with clothes, debarred from out-door exercise in contact with the life-giving air.—*Medical Brief.*

COXA VARA.

By FIELDING LEWIS TAYLOR, M.A., M.D.

COXA VARA may be defined as a bending of the neck of the femur downward, to which is generally added flexion forward or backward, in a more or less horizontal plane.

Most commonly the neck is convex forward, so that the outer surface of the greater trochanter looks backward and outward and the limb is everted. Sometimes the neck is convex backward, in which case the limb is inverted, while the trochanter looks forward and outward. Occasionally the neck is only bent downward.

This affection is usually unilateral, occurs between the ages of three and twenty years, and is more frequent in males than in females. It is more frequently noted in adolescence than in childhood. Anything which causes softening of the neck of the femur may be regarded as a cause of coxa vara. Hence we find rickets most frequently assigned as a cause. It may be localized rickets occurring later in life, or rickets of the usual type. It is very likely that early rickets occasions some downward bending of the neck of the femur in childhood, which is increased later in life by occupations requiring long standing in such a position that additional curvature downward is given to the femoral neck, together with a curvature forward or backward. Osteomalachia, softening from tuberculosis, and fracture are among other causes mentioned.

It is diagnosed from hip-joint disease by the absence of joint-tenderness and muscular spasm, while motion is only limited in certain directions. From congenital dislocation by the fact that the former trouble is not present at birth, but develops later, and that the movements are more free in congenital dislocation. Some writers mention the chance of confounding it with upward enlargement of the acetabulum and rachitic curve of the upper end of the shaft of the femur. The diagnosis can often be made with certainty by the X-ray.

The symptoms are usually first manifested after some unusual exertion, and consist of pain in front of the joint and thigh, often radiating to the buttock. There is gradual and

progressive lameness, and a peculiar waddling gait due to shortening of from $\frac{1}{4}$ to $2\frac{1}{2}$ inches and diminished range of



motion at the hip joint. There is prominence of the greater trochanter in all cases, and it is above Nèlaton's line. In the

most usual form there is marked eversion of the limb, while flexion, inward rotation and abduction are limited. "If the



limb is flexed until the foot touches the opposite knee, there is rotation outward." When the neck is simply bent downward

there is no eversion. When the convexity is backward, the limb is inverted, while extension and outward rotation are limited. Lordosis is sometimes marked. The cuts are from photographs of a child about five and a half years old, suffering from the usual form of *cova vara*.

Treatment.—In recent cases rest in bed or a Thomas' splint should be prescribed. General hygienic treatment must not be neglected at the same time. Severe cases require a linear osteotomy below the trochanter, or that a wedge of bone be removed from the neck of the femur.

173 West 73d Street.

THE TWENTIETH CENTURY BABY.

The baby of to-day bids fair to replace the crush of ancient creeds and the wreck of superstitions that have been everywhere undermined by the ruthless hand of modern science. For its behoof many books are written, many carriages are constructed, many foods are invented, many garments, many toys, and many medicines are advertised. As a matter of sober fact, it is threatened with manifold drawbacks to development, short of actual extinction, by the wholesale substitution of the artificial for the natural. Instead of the most perfect food in nature, mother's milk, we find a host of artificial substitutes, each one of them, if we may trust the proprietary representations, calculated to rear an infant with the brains of a Newton combined with the frame of a Sampson. How often, alas! the outcome of all these costly cares is a being of stunted body and limited intellect, unfitted to play a soldier's part in the battle of life. This question of food strikes deep into the physical welfare of a race, and there can hardly be a more serious national problem than how to rear this twentieth-century baby of ours in strength and happiness. There is a vast deal of nonsense written and taught about the proper way to cloth, nurture, and tend babies generally. The best basis is that of plain milk diet, either from the breast or from modified cow's milk. For the rest those ills that are preventable should be prevented. Most of the mischief done in the nursery is the result of attempting to do too much. It would be an important step toward the stability and future of our race were the laws of health to be taught in our schools, with a special class on nursery management for the girls' classes.—*Medical Press.*

EDITORIAL COMMENTS.

Psycho-Physical Laboratory
in the Department of the
Interior

A Senate Amendment to the Sundry Civil Bill, for a psycho-physical laboratory has been introduced:

“For the Establishment in the Department of the Interior of a Psycho-Physical Laboratory:

“For a salary of the director of the laboratory, \$4,500.

“For expenses incidental to the collection of sociological, anthropological, abnormal and pathological data, including the study of the criminal, pauper and defective classes, and for the preparation of special reports on results of work, and for all necessary printing, \$16,500.”

Its purpose is to gather sociological, pathological, or abnormal data, as found especially in *children, and in criminal, pauper, and defective classes, and in hospitals*. Besides these data it is desired to gather more special data with laboratory instruments of precision, and to make such experiments or measurements as are generally considered of value by psychophysicists and anthropologists. While the field is necessarily a very large one, the purpose is to study those parts of it which seem at the time to be productive of the most *practical* results.

When by such a comparatively small appropriation so important a work can be carried on, we do not see how the advisability of the passage of this amendment can be questioned. It is very important, too, that the work be undertaken by trained and conservative statisticians, such as those in this department of the government service have shown themselves to be, that we may have an unbiased opinion upon such investigations as may be collected by others.

Only by very extensive observations in this field can we ever hope to make trustworthy inductions concerning the rela-

tionship of the physical to the psychical, and so appreciate the true significance of the so-called stigmata of degeneration, about which so much has recently been written. By such studies we hope to be able also to determine the influence for good or evil of our present educational methods upon the bodies, minds, and morals of our school children, and thus perhaps be able to adjust such methods to the varying requirements of the individual. Prolonged, careful, and painstaking observations of this character will also enable us to form a true concept of a normal child and lead us to appreciate the significance of variations therefrom. We hope thus to be enabled in large measure to counteract irresponsible but none the less injurious tendencies.

T.

**Hearing Exercises in the
Treatment of Deaf Mutes**

The *Maryland Medical Journal* for December, 1900, contains an interesting report, by Dr. J. J. Carroll, of the proceedings of the Section on Otology of the International Medical Congress held in Paris, August, 1900. The paper that particularly attracted his attention was upon hearing exercises in the treatment of deaf mutes, by Dr. Urbantschitsch, of Vienna, and Dr. Schwendt, of Basle. The method consists in first repeatedly shouting a vowel, like *a* or *o*, into one ear of a patient who is incapable of hearing loud conversation or the sounds of the tuning fork. "If no response is given a funnel is made of the hands so as to intensify the sounds and the different vowels repeated in a loud voice close to the ear. If still no response, loud notes of the accordion are tried, to awaken, as it were, the dormant powers of the labyrinth."

If the ear responds to the loud notes of the accordion and appreciates the different vowel sounds, consonants are then tried, and later, words, phrases and sentences, according to the progress made. The method is very slow and requires great patience and perseverance on the part of the instructor.

Very small children are supplied with wind and stringed instruments, music-boxes, etc.

"The consensus of opinion among the otologists of the congress seemed to be that when deafness is total or nearly so it is useless to employ the hearing exercises, but that those subjects who possess an appreciable amount of audition should have hearing exercises supplemented by the phonograph and musical instruments which have agreeable tones, such as the piano, organ, accordion, etc." T.

Note on
Spinal Anesthesia in Children

Quincke's lumbar puncture has become generally recognized as a valuable means of diagnosis and treatment in cerebro-spinal diseases of children. That this method has proven comparatively harmless in the hands of those versed in its technic does not at all prove the harmlessness of the Corning method of spinal anesthesia in children. Some cases of the use of this method in children have now been reported with no very serious after-effects, so far as we have been able to learn. The fact that consciousness is not interfered with renders it inapplicable in many cases. It is indeed a valuable adjunct to our methods of producing anesthesia and should be regarded only as such. Experimentation upon patients in which general anesthesia is not distinctly contraindicated seems to us absolutely unjustifiable. Many have for a long time hesitated to use cocaine in operations upon children when injected subcutaneously. How much greater must be the danger when this substance is brought into close relation with the nervous centers? T.

SOCIETY REPORTS

BRITISH MEDICAL ASSOCIATION MEETING AT IPSWICH.

Third Day's Proceedings, August 13, 1900.

Discussion on Enlargements of the Spleen in Children.

Opened by SAMUEL WEST, M.D.

(Continued).

DR. C. C. CORLETTE communicated a paper on **The Causation of Infantile Scurvy**. It is known that the disease is usually found in infants belonging to the better class (?), where the diet has been carefully restricted to boiled milk, or to boiled milk supplemented by the various cooked infant foods. The writer believes that the defaulting factor is citric acid itself, and wonders that the phenomena of scurvy should not have been explained heretofore by this simple hypothesis. Citric acid is a normal constituent of fresh milk, and a quart of cow's milk contains about as much citric acid as a large lemon. The citric acid exists in milk as a calcium salt, probably the normal calcium citrate, and may be present either in crystals or in the amorphous form. The amorphous form is more soluble in both cold and hot water than the crystalline, and by boiling for a sufficient length of time the amorphous salt is converted into the crystallizable. When milk is raised to the boiling point its power of holding citric acid as calcium citrate is greatly diminished, and by so much the more as the citrate is converted into the crystallizable variety; and in proportion to the degree of saturation existing in the fresh milk, so is the tendency of the salt to precipitate out, and be more or less lost.

Now, since the sterilization of milk involves boiling, it is easily seen how the restriction of diet to sterilized milk may cause a deficiency in the supply of citric acid to an infant, and if deficiency of citric acid be a cause of infantile scurvy, its origin can thus be very easily explained.

It has been noticed already that infantile scurvy, though apt to arise in children fed largely on sterilized milk, does not occur in those who have been fed on pasteurized milk. Adopting the citric acid theory as a working hypothesis, a reason for this can be easily found. The process of pasteurizing on the large scale is such that as the milk flows on in a constant forward stream it is raised to the temperature required, and for the period required, and then artificially cooled. The temperature reached is comparatively low, and the solvent power of the milk proportionately less interfered with. Further, the temperature and the time occupied can have but a minimal power of converting the citrate from the more soluble amorphous into the less soluble crystallizable form. If, however, we suppose a certain amount to be perhaps precipitated, it would, owing to the persistent onward current, be swept on and reach the cooling stage with everything favorable to its being there redissolved by its agitation in the now cold milk.

Milk pasteurized on the small scale at home is necessarily subject to somewhat other conditions, but it is scarcely necessary to examine them here, since home pasteurized milk has not yet become sufficiently common.

The following precautions seem the most rational means of diminishing as far as possible the loss of citric acid in the boiled milk: Any water used as a diluent to the milk should be added, not after, but before the boiling, thereby making the fresh mixture a less concentrated solution of citrate than the undiluted milk, and therefore, probably, less likely to suffer loss of the salt by its comparative insolubility on boiling and thereafter. Further, the milk should not be boiled a moment longer than the occasion requires, so as to minimize the formation of the more insoluble crystallizable citrate. Also, the milk should not be poured off when hot, but should be allowed to cool in the vessel in which it was boiled, and be well stirred when cool enough, in order to redissolve citrate as far as possible.

Lastly, there is the possible expedient of making the milk a better holder of citrate by other means. It is conceivable that the addition of a substance of gummy consistency, like gelatine, isinglass, dextrin, or gum-arabic, before boiling, might make the milk better able to hold precipitated crystals in suspension and thus prevent their loss. It seems possible

also that milk could be made a better solvent of calcium citrate. We have seen that this citrate is soluble in excess of ammonium phosphate, and that there is evidence to show that potassium and sodium phosphates exert an analogous influence. It has been also suggested that the small amount of potassium phosphate present in milk may be one of the factors helping to make milk a better solvent of calcium citrate than is water. It may therefore be that an artificial increase of alkaline phosphate would increase its power of dissolving the citrate; 10 or 15 grs. to the pint, added before boiling, could be tried. But though the method seems feasible on deductive grounds, its effect has not been determined experimentally.

Whether the addition of alkaline phosphate should or should not be condemned on other grounds is a question that deserves a little consideration. We have seen that if calcium citrate is precipitated, calcium phosphate is also thrown down, and so the boiled milk probably loses a certain amount of both these substances. On the other hand, if the calcium citrate can be retained by adding a little potassium or sodium phosphate, there is no loss of either of those substances, but there is a surplusage of so much alkaline phosphate. Seeing that this latter is in small quantity a natural constituent of human food stuffs, a moderate increase of it, at least of the sodium salt, so long as no undesirable effect on intestinal peristalsis be noticed can scarcely have much pharmacological importance, no more, that is, than the added sodium carbonate which is administered in peptonized milk without demur, and certainly less in comparison with those innately foreign substances—boracic acid, borax, and formaldehyde—which are so constantly found in milk.



PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, June 12, 1900.

The President, Dr. Alfred Stengel, in the Chair.

Dr. JAS. SAILER exhibited a case of **Spurious Meningocele of the Occipital Bone.**

The patient was a child 4 years of age, who about Christmas time fell downstairs and was drowsy for two hours afterward. A month later she developed vomiting, strabismus and staggering gait. The condition had grown steadily worse and about three weeks before she was shown a pulsating tumor appeared in the occipital region in the neighborhood of the external occipital protuberance. It communicated with the cranial cavity by an irregular opening in the occipital bone. A thrill was felt by palpation and a murmur heard on auscultation. An exploratory puncture proved that the tumor contained blood.

Dr. W. R. WILSON.—There are two points of importance which occur to me. In the first place, the absence of increase in tension in the tumor. In meningocele the increase of cerebro-spinal fluid would cause increase in pressure during the effort of crying to such extent as to distend the sac and augment the tension of the sac wall. I should think that this would be an important sign in this case, inasmuch as the tumor has been of short duration and has yet been rather extensive, showing that the separation of the bone, the result of traumatism, has permitted a rapid discharge of fluid.

The second point is that the surface of the tumor does not resemble the covering of such cystic tumors when found in the congenital instances of meningocele and in spina bifida. I might allude to one point in the differentiation of congenital tumor, that is, situation of the separation of the bone. In as far as I have been informed, in the congenital tumors, the protrusion of the membrane occurs usually through the separated portions of the calvarium, that is, in the sutures and fontanelles. Therefore in meningocele of congenital origin we have a protrusion above the occipital protuberance rather than in the region of the protuberance; in a like manner a

tumor situated inferiorly to the occipital protuberance may find its exit in the region of the foramen magnum. The hinge-like joint between the basilar portion and squamous portion of the occipital bone may also offer a yielding partition.

Dr. JOPSON.—The tumor, whatever its nature may be, has apparently its origin from within the skull. Cases have been reported in which angiomas have so eroded the skull from without that connection with the sinuses has been established; but the fact of the strabismus and other symptoms of pressure being noticed before the tumor tends to show that the origin is from within the cranial cavity. I do not think we can altogether exclude angio-sarcoma, which would produce pressure upon the brain and by erosion or separation of the bones at this point would produce a pulsating tumor externally. Cases of so-called "sinus protrusive" have been described due to protrusion of the longitudinal sinus through an ununited fontanelle or imperfectly ossified bone and associated with rickets. My own opinion is that the tumor is some form of angioma or dilatation of the blood vessels which communicated with the sinuses at this point, and that the pulsation is derived from communicating with an artery or from the transmission of the pulsation from the brain.

Dr. SAILER.—I am glad to have Dr. Wilson's support on the improbability of the congenital origin of this tumor. I was satisfied that it was not congenital, but could not make as satisfactory a differential diagnosis.

The sinus protrusion to which Dr. Jopson refers have been described by Strohmeier, but as I understand it it is essentially different in character and nature from the present lesion. The fact that the tumor developed a long time after the symptoms of brain pressure is I think sufficient proof that it was not due to distention of the veins of the diploë. Its long duration and the flourishing general condition of the patient is against its sarcomatous nature, particularly is this true in so young a child.

The most important point is the treatment. I had hoped that Dr. Jopson would discuss this more fully, because it is a surgical and not a medical question. In the cases of spurious meningocele operation has been performed almost invariably and in many of the cases, especially since the introduction of antiseptics, the operation has been entirely successful.

Dr. ALFRED HAND, JR., reported six cases of so-called **Glandular Fever**, the main symptoms, as described by E. Pfeiffer, being irregular fever with enlargement of the cervical glands beneath and posterior to the upper end of the sterno-mastoid muscle. Three of the cases were mild, terminating in a few days, the other three lasting from one and a half to three weeks and presenting so great an enlargement of the glands that there was decided torticollis, the swelling extending from near the angle of the jaw to the middle line posteriorly. None of the cases suppurated, a result which was thought to be due largely to the free use of ichthyol in the form of a 25 per cent. ointment, although in one case where this did not seem to control the swelling pure ichthyol was applied on lint, with a rapid subsidence of the gland. Study of cultures taken from the pharynx in three of the cases gave varying results, streptococci predominating in one, staphylococci in another, and the third being a mixture of both, with diplococci and a few small bacilli (not the diphtheria organism). In view of the obscure and evidently varying etiology, the term suggested by A. Muggia, acute cervical lymphadenitis, is held to be without dogmatism as to the cause, while the term glandular fever conveys the idea of a distinct disease with a specific infection. Bacteriology may at some time prove such to be the case, but until that time the term glandular fever is held to be an unnecessary and therefore undesirable addition to disease nomenclature.

Dr. CROZIER GRIFFITH reported the histories of two outbreaks in households of what might at first thought have been taken for the so-called glandular fever, but which further study showed to be without doubt influenza with lymphatic involvement. In one family three children exhibited the affection of the glands. In the other household four persons were ill with what seemed to be the same infection in each case, although only two of them showed glandular swelling.

Dr. S. N. HAMILL.—Some years ago while engaged in preparing a paper on glandular fever I was impressed by the wide diversity of opinion as to its etiology and symptomatology. If in my article I fixed upon any definite cause for the condition, as Dr. Hand seemed to intimate, I have for-

gotten that fact. I collected the causes given by the various writers, and while I emphasized the one most frequently mentioned, I suggested that owing to our indefinite data it was best to consider the etiology as undetermined. I have seen many cases of glandular enlargement since this paper was written, and some of these have closely simulated the symptom complex which Pfeiffer described. The etiology remains indefinite so far as I have observed. During the past winter I have seen cases similar to those described by Dr. Griffith. I observed two children in the same family having an infectious condition accompanied by quite marked and rather earlier than in the cases of Dr. Griffith, enlargement of the glands posterior to the upper portion of the sterno-cleido-mastoid muscle. There were some catarrhal symptoms present in both, and one child had a limited patch of congestion at the base of the right lung; the other child had a mild bronchitis, and both a marked laryngitis. The trained nurse in charge of one of them developed laryngitis which was accompanied by a marked febrile curve, with enlargement to the size of a pigeon's egg of the glands posterior to the sterno-cleido-mastoid muscle. There was not much pain or tenderness, and in all cases the subsidence of the swelling was more rapid than in the majority of cases of so-called glandular fever. There was no fixation of the head, nor was there any complicating nephritis as in the majority of Pfeiffer's cases. The maximum temperature in the worst of these cases was 104. The temperature did not fluctuate materially and reached the normal about the 3d day. While it is true that an epidemic disease, in some respects resembling influenza, was prevalent at the time these cases developed I am not satisfied that without bacteriological examination we should err as much in calling them glandular fever. I believe we are making too wide an application of the term influenza. Yesterday I saw in the Howard Hospital an acute enlargement of the glands under and posterior to the right sterno-cleido-mastoid muscle which was accompanied by wry-neck in a boy aged 9 years. The glands were the size of a hen's egg; the surrounding cellular tissue was much infiltrated, giving a board-like hardness; the body temperature was 103 F. The child had been ill for three or four days. There was some tenderness on pressure and the head was held fixed. Examination of the

throat revealed marked redness of both tonsils, more especially of the right. There was no exudate and no redness beyond the tonsils. The exact nature of this case, owing to the fact that the child was seen but once in the dispensary service, remains undetermined, but it seemed to resemble glandular fever in many particulars.

I agree with Dr. Hand in believing that the majority of cases described as glandular fever are not dependent upon a common cause. There is a class of cases, however, similar to those reported by Pfeiffer, which, whatever their etiology may be, certainly have the same symptom complex. I am not sufficiently satisfied that it is a bad thing in the absence of any other classification to describe these cases under the term glandular fever.

Whatever may have been the purpose of Pfeiffer's original communication he has certainly accomplished much good by stimulating interest in a subject which had up to the time of its appearance been more or less neglected.

The case which I reported to this society a few years ago, in connection with the paper referred to, was unique in my experience as well as in that of one of the ablest practitioners who saw the case in conjunction with me. The case had none of the characteristics of the so-called acute cervical adenitis, but did, on the other hand, bear a close resemblance to the cases described by Pfeiffer, barring the fact that there was not a complicating nephritis present. Cultures made from the throat in this case showed the presence of staphylococci and streptococci. It is impossible to say whether or not they had anything to do with the development of the condition. There was no epidemic of influenza prevalent at the time, and there was no other person ill in the house.

Dr. Hand's reference to the presence of a rapid pulse in his case reminds me of two cases which I observed in the same family. In one child there was no history of any rash; in the other a rash was present, which the attending physician had described to the family as a scarlet fever rash but not scarlet fever. There was no desquamation at the time I saw the child, which was about nine days after the rash had disappeared. In both cases the temperature was elevated and the pulse was unusually rapid. One child developed nephritis, which may

have been connected with the glandular condition or may have been the result of a pre-existing scarlet fever.

Dr. WILLIAM R. NICHOLSON, Jr., reported a case of **Melena Neonatorum due to the Bacillus Pyocaneus**.

The case was that of a male born at term in the Maternity Hospital, of Philadelphia. Nothing of note occurred until the sixteenth day, when a stomatitis developed. The actual bleeding began the next day and at first showed itself as a free flow from the mouth and throat. On the next day the stools contained blood and clear blood was afterwards frequently passed.

Death took place on the sixteenth day. Its cause was apparently acute anemia. The autopsy showed the presence of an acute triple infection, the organisms present being the staphylococcus pyogenes aureus, the bacillus ærogenes lactus, and the bacillus pyocyaneus. Of these the first two were general infections. The bacillus pyocaneus was found only in the bile and tissues of the liver.

The gross lesions found at autopsy were a generalized parenchymatous degeneration, a sclerosis of the pancreas, an acute enteritis, and a commencing cirrhosis of the liver. There were no signs of syphilis other than sclerosis of the pancreas, a condition which occurs also in many other diseases, as Kasa-hara has shown. There were no signs of ulceration detected.

The reasons given for considering the case to have been one of pyocyanic infection were: the negative history of the first sixteen days of life with the subsequent development of symptoms explainable only upon the assumption of an infection and the detection of the bacillus pyocaneus. The influence of the other two infections was considered to be predisposing.

DISCUSSION.

Dr. S. M. HAMILL.—Recently I have been studying the cause of death in new-born children. Dr. Norris has kindly placed at my disposal the children dying in the Preston Retreat. In a number of autopsies I have made cultures from the liver, spleen, kidney, and the heart-blood. In two instances the colon bacillus was present. This, however, is of no significance, since it is commonly found post-mortem in almost any

portion of the body. In the other cases the inoculated tubes remained sterile.

I believe with Dr. Nicholson that in the majority of cases of hemorrhage in the new-born the condition has an infectious origin. In one of my cases dying from hemorrhage into the right suprarenal capsule with subsequent rupture into the peritoneal cavity, the bacteriological examination was negative. While it is probable that hemorrhagic disease of the new-born is most commonly of an infectious nature, it is unquestionably true that there are other ways of accounting for the isolated hemorrhages into the suprarenal glands; the location of the organ, the richness of its blood vessels, especially of its veins, the proximity of the inferior vena cava which receives the blood almost directly from the gland on the right side, are probably indirectly responsible for the majority of these hemorrhages. As Droubaix has suggested, it is easy to understand how during labor pressure can be brought to bear upon the inferior vena cava and the suprarenal gland, located, as they are, between the liver anteriorly and the vertebral column posteriorly, thereby giving rise to congestion of the vessels of the glands which, in some instances, may result in hemorrhage. There has been comparatively little useful work done in the study of the cause of hemorrhagic diseases in the new-born, and I feel that Dr. Nicholson's contribution is therefore of unusual value.

Dr. C. A. E. CADMAN reported a case of **Leukemia** in a boy 17 years of age. The fairly good color of the skin and mucous membranes, the almost entire absence of symptoms, and the presence of a tumor in the abdomen of a boy, two of whose sisters had recently died, one of tuberculosis and the other of sarcoma, made the diagnosis without the examination of the blood somewhat doubtful.

The study of the blood, however, showed the true nature of the disease.

There was only 25 per cent. of hemoglobin, a surprisingly low percentage when one recalls the good color of the skin and mucous membranes. There were 2,730,000 red blood corpuscles and 443,600 white blood corpuscles, a ratio of six to one. The differential count of the leucocytes was as follows:

Polynuclear.....	50.9	per cent.
Mononuclear.....	9	"
Transitional.....	4.5	"
Lymphocytes	5	"
Myelocytes	25.5	"
Eosinophilic myelocytes	2.5	"
Eosinophiles.....	3.6	"

Microcytes, macrocytes, poiklocytes, and nucleated reds were present.

Report of Three Cases Simulating Glandular Fever, etc.

DISCUSSION.

Dr. A. E. ROUSSEL.—The subject is of particular interest to me for the reason that three years ago I read a paper before the Philadelphia County Medical Society in which I reported four cases of glandular fever, one an adult.

Since that time I have seen other cases and noted the numerous reports by foreign observers; indeed, the recent editions of some of the text-books, such as Ander's and Ashby and Wright have added this subject to their list.

I believe that the cases are suggestive of a particular infection the cause of which is not yet known. In most instances the throat seems to be somewhat congested, and in my group of cases there was a disproportionate rapidity of pulse as compared to the fever which causes the onset to be suggestive of scarlatina.

I must confess that some of the recent descriptions of this disease are markedly different from the original cases mentioned by E. Pfeiffer, and in these instances the enlarged glands are, to my mind, due to other and varied causes.

And, on the other hand, we must avoid the error of ascribing too much to influenza, which bids fair to take the place occupied some years ago by malaria, and which, like the latter, would probably be found much less common if bacteriological examinations were more frequently made.

As regards the treatment, I do not believe it a matter of much importance because almost all the cases recover. I have only been able to find a record of two fatal cases and in these instances not only was the diagnosis questionable but they occurred in weak and debilitated subjects. The convalescence, however, is generally slow and tedious.

CORRESPONDENCE

DEAR SIR: Every now and then we hear of a death from narcosis in operating upon tonsils and adenoids, the usual anesthetic being chloroform. The report of another fatal case, this time from nitrous oxide gas, reported by Prof. Evans, of Louisville (PEDIATRICS, Dec. 1, 1900), again raises the question—should anesthesia be resorted to in such operations? The question is one of extreme interest and importance. For a long time chloroform was regarded as especially valuable and safe in children. Hinkel, of Buffalo, in 1898, called attention to the dangers of the drug in adenoid operations. Newcomb has collected a number of cases in which fatal results followed anesthesia. Muir, of New York, has had an unfortunate experience. A number of fatalities have not been reported, to my own knowledge.

In an excellent paper read before the Am. Laryng. Soc., June 1, 1900, Halstead, of Syracuse, discusses the subject in a scientific and thoughtful manner. He says: "I myself know, or have heard through verbal communications, of more chloroform fatalities than are reported in all American medical journals." Theoretically, chemically and from post-mortem findings, he looks upon chloroform as particularly dangerous, and discards it in view of the high mortality. Ether given by an expert is advised. Its use is preceded by a hyperdermic of atropia and local applications of cocaine to the nose, to avoid the vomiting and increased pharyngeal secretion.

Whether this plan is safe or not, remains to be seen; it has been successfully employed by him for nearly two years to his entire satisfaction.

Adenoids must be regarded as the local manifestations of a constitutional dyscrasia, termed status or habitus lymphaticus, lymphatism. We find a characteristic hyperplasia of the lymph nodes, spleen, thymus and frequently of the lymphoid tissues, associated with hypoplasia of the heart and aorta. A frequent association is rickets. Paltauf and Ewing have shown that there is a diminished vital resistance, a systemic weak-

ness, and particularly a tendency to sudden cardiac paralysis. The papers by Halstead and Ewing ought to be carefully studied by those who are engaged in the work.

In the case reported by Evans, death followed the use of nitrous oxide gas, administered by an expert, and the fatal result was attributed to a presumed diphtheritic paralysis. From a study of the case it seems more plausible to attribute the fatality to cardiac paralysis, the result of the "habitus lymphaticus"—the existence or dangers of which are so frequently overlooked by specialist and practitioners in general.

In Austria and Germany the operation is done without narcosis. Some expert operators in New York, and it has been my good fortune to see a number, operate without anesthesia. The pain does not appear to be severe. If all of the growth be not removed at one time, a second or even third scraping may be made subsequently, or the few remaining fragments may be broken up with the finger. In view of the inherent danger of anesthesia in children of this lymphatic constitution, it is far better to operate without narcosis, if need be at two or three sittings, rather than to run the dangers of sudden heart paralysis with an anesthetic.

Time and again, the operation has been performed before the sections in the practical course at the Vanderbilt Clinic, and the students have been surprised to find that the little patients do not appear to suffer much pain; nor was there much shock. It has been customary in this service to remove the tonsils and several weeks later curette the adenoids. If any fragments remained they were broken up with the finger or removed with a smaller curette subsequently. The operation can be done quickly, provided the children are not aware of the nature of the contemplated act.

If told beforehand that an operation was to be made, there was usually a struggle on the part of the children. If, however, they were in ignorance of the fact, very little trouble was experienced.

Yours sincerely,

F. HUBER.

BOOK REVIEWS.

LESSONS ON THE ANATOMY, PHYSIOLOGY, AND HYGIENE OF INFANCY AND CHILDHOOD FOR JUNIOR STUDENTS. Consisting of Extracts from Lectures given at Rush Medical College. By A. C. Cotton, A.M., M.D. Chicago: Chicago Medical Book Company. 1900. 8vo, pp. XIV-174; with numerous charts and illustrations.

The object of this book is to acquaint the student who is about to begin the study of pediatrics with the anatomic and physiologic peculiarities and with the principles of the hygiene of infancy and childhood. The first and second parts of the book are devoted to anatomy and physiology. While these subjects are treated in a manner that is commendable for its conciseness and clearness, the presentation is very elementary and scarcely sufficiently complete on some topics. We notice that the name of Ballantyne has been omitted from the list of anatomic authorities which appears in the preface. Surely, no work on this subject can be written without reference to the writings of this acute observer and indefatigable worker. In general, the sources of many of the rules, statements, and figures which form the material of the anatomic and physiologic portion of Dr. Cotton's book are not given. In the chapter on growth, for example, we are unable to find any reference to Liharzik's researches concerning the laws of progression and periodicity.

The sections on hygiene are certainly the best part of the book. The suggestions are practical, rational, and tersely stated. The chapters on artificial feeding could have been more complete without disadvantage.

Dr. Cotton's book deserves a better dress than that which the publishers have given it. The illustrations are, for the most part, good, but they are so misplaced in the process of binding that it is a hopeless task to look for the proper illustration when one meets a reference to a figure in the text. There are also a number of unfortunate misprints, and the spelling is not at all consistent throughout the book.

Barring these minor imperfections, some of which were beyond the control of the author, the book will be found a very useful and trustworthy guide for the beginner in pediatrics,—for the junior student as the title page has it. S.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
under the direction of George Alexander Saxe, M.D.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, AUG.-
SEPT., 1900. (Continued).

Proceedings of the Section on Diseases of Children of the Thirteenth International Medical Congress (Continued).

COMMUNICATIONS TO THE SECTION.

1. Researches Concerning the Pathogenesis of Gastroenteritis in Nurslings. By Dr. JEMMA, Geneva.—The author concludes that: (1) The bodies of bacteria which are present in milk may produce grave gastrointestinal disorders in the animals which are fed on this liquid. If the milk be suspended at the end of a certain time, say twelve or fifteen days, and if sterilized milk or breast-milk be substituted, the animals may temporarily survive, but soon die. At the autopsy the lesions of gastroenteritis are found, together with fatty degeneration of the liver. The same lesions are found in the animals which survive. (2). Milk containing the cadavers of the colon bacillus produces in young children less severe lesions than that which contains the cadavers of all the bacterial species which are commonly found in milk. (3). Milk which contains only the cadavers of the proteolytic germs rarely gives rise to disturbances.

2. The Etiology and Pathogenesis of Gastroenteritis. By Dr. H. TISSIER, Paris.—The reason why gastroenteritis in nurslings differs from that of infants fed artificially is that there are differences in the flora of the intestine of each of these classes of children. The origin of the gastroenteritis is almost always an infection, but the artificially fed child is more predisposed on account of the greater abundance of fermentable substances in his food.

3. Pathologic Changes in the Gastrointestinal Mucosa Produced by Primary Artificial Atrophy in Young Dogs. By Dr. F. FEDE, Naples.—Primary athrepsia is due to malnutrition, while secondary athrepsia is the result of tuberculous or other grave changes in the digestive apparatus, due to various cachetic maladies. The author fed five young dogs in different ways in order to obtain the conditions corresponding to athrepsia in infants. He found in all five animals a thinning of the gastrointestinal walls, an atrophy of the muscular layers, and a shrinking of the cellular protoplasm.

4. Alterations in Metabolism in Nurslings with Gastroenteritis. By Dr. PFAUNDLER, Graz.—The theory of Czerny and Keller, to the effect that nurslings with gastroenteritis are affected with an acid poisoning cannot be considered as demonstrated, for the elimination of ammonia in both healthy and diarrheal infants, according to the author's researches, was found to be approximately normal

5. Alimentary Glycosuria in Nurslings. By Dr. TERRIEN, Paris.—The author examined the urine of forty-two nurslings with glycosuria, who had at the same time had gastroenteritis and draws the following conclusions from the material thus obtained: Alimentary glycosuria does not appear in nurslings except when excessive doses of sugar are given, at least 5 grams of pure glucose or 4 grams of pure lactose per kg. of body-weight. In gastroenteritis glycosuria appears with smaller quantity of sugars in the diet—3.5 gram or even less. Glycosuria is observed in half the cases of gastroenteritis under these conditions, and is in proportion to the diarrhea and emaciation.

6. Experimental Researches Concerning the Protecting Rôle of the Liver against Certain Alkaloids in Young and Adult Animals. By Dr. G. A. PETRONE, Naples.—Experiments on dogs of various ages, performed with the intention of determining the protective value of the liver in the young as compared to that function in adults, furnished the data for the following conclusions: (1). The livers of young dogs represent very energetic protectors against the action of the alkaloids. (2). This action, as a rule, is equal if not superior to the protection exercised by the liver in similar conditions in adults.

7. Experimental Researches Concerning the Toxins of the Colon Bacillus. By Dr. G. A. PETRONE, Naples.—The writer's conclusions are as follows: (1). The best culture medium for the bacillus coli is a digested portion of brain or spleen mixed with a little blood serum or ascitic fluid. (2). There is always a great difference between the virulence of a bacillus coli culture and the toxicity of the same. (3). In infection with the colon bacillus the principal cause of the trouble is the toxic product of the germs. (4). The colon bacillus produces a toxin which does not seem to have the properties of the diphtheria or the tetanus toxins because it cannot produce immunity in the animal after injection of increasing doses.

8. The Value of Goat's Milk in the Feeding of Infants. By Dr. BARBELLION, Paris.—Goat's milk is preferable to artificial nutrition and can be obtained in fresh, uncontaminated state. It is preferable to cow's and asses' milk.

9. Intestinal Antisepsis in Infants. By Drs. F. FEDE and GALLO-TOMMASI, Naples.—For abstract see *Pediatrics*, July, 1900, in PEDIATRICS, 1900, No. X, p. 395.

10. The Treatment of Athrepsial Ulcerations and, in General, of all Atonic Wounds of Childhood by External Applications of Subcarbonate of Iron. By Dr. R. SAINT-PHILIPPE, Bordeaux.

11. Researches Concerning the Elimination of the Compound Sulphur Acids of the Aromatic Series in Infants. By Dr. GALLO-TOMMASI, Naples.—The total quantity of these acids eliminated in the urine during twenty-four hours, in health, varies considerably from day to day and from child to child. It is never directly proportional to the age. Hence the mean daily quantity has no absolute diagnostic value. Milk diet diminishes and an exclusive meat diet increases the amount.

12. Remarks Concerning 1,778 Cases of Diphtheria. By Dr. RICHARDIERE, Paris.—These cases presented 15.7 per cent. mortality if the cases in which the children were admitted within twenty-four hours of death be included.

In one-quarter of the cases there were long bacilli, and in the other three-quarters medium-sized and short bacilli. Streptococci were almost invariably present, so that the coexistence of streptococci and diphtheria bacilli is of no prognostic value.

DISCUSSION.

Dr. TRIBOULET, Paris, said that he did not hear Dr. Richardière speak of nephritis in his paper. He saw two cases of fatal uremia caused by injections of serum.

Dr. RICHARDIERE said that he did not see any cases of nephritis among his 1,778 patients.

Dr. BEZY, Toulouse, said that injections of serum have no effect upon albuminuria.

Dr. HERON, Tours, confirmed the opinion of his colleague from Toulouse, and said that a single dose of serum is sufficient in all cases, but that this injection has little influence upon grave cases.

Dr. VIOLI, Constantinople, asked Dr. Richardière (1) Whether the dose injected was always the same in the grave cases and in the mild. (2) Whether children who suffered from grave intoxication were in this condition because the treatment had been begun too late.

Dr. RICHARDIERE replied that, as a rule, a single injection suffices, but in certain cases it will be better to renew the dose two or three times. The persistence of the membranes, and not the temperature, are indications for the renewal of the dose.

Dr. GEFFRIER, Orleans, reported a case similar to those related by Dr. Triboulet. A child, aged 8 months, with diphtheritic ophthalmia of a benign type (?) received almost at the end of the disease an injection of

10 cc. of serum. From this moment there was complete anuria, and the child died five days later. In all cases Dr. Geffrier thinks the dose of 10 cc. almost always sufficient.

13. *Ecouvillonnage* of the Larynx and Trachea in Croup. By Dr. GEFRIER, Orleans.—The author has for a long time been in the habit of performing *ecouvillonnage* of the trachea by means of feathers dipped in a solution of sodium benzoate, while the same solution is sprayed into the orifice of the canula, in children who have been tracheatized and whose false membranes are abundant, reaching the trachea. If necessary he removes the membranes with a Collin's forceps.

The author has sought to improve the technique of *ecouvillonnage*, and has devised an instrument, a model of which was shown. This instrument resembles a Bellocq's canula. Its inner stem, ending in a dull button, carries near this button a bundle of horse-hair which remains adherent to the central stem while the instrument is introduced into the trachea. When the rings which are held in the fingers are moved, the strands of horse-hair spread out and come into contact with the mucosa. The instrument is then withdrawn quite rapidly, and re-introduced if necessary.

DISCUSSION.

Dr. SEVESTRE asked whether the friction of the horse-hair will not produce erosions in the mucosa. He would prefer intubation in all cases, and thought that Dr. Variot himself had now given up *ecouvillonnage*.

Dr. Variot said that he has not given up *ecouvillonnage*, but this procedure must not be used everywhere. In cases of croup in which the membranes are abundant, while the spasmodic element is hardly noticeable, *ecouvillonnage* may be used with propriety.

Dr. MARTIN, Paris, agreed with Dr. Variot.

Dr. VIOLI asked whether Dr. Variot has observed secondary infections after *ecouvillonnage*.

Dr. VARIOT replied that *ecouvillonnage* does not expose the patient to any more danger than does intubation. In both cases all depends upon the skill of the operator.

14. Injections of Anti-diphtheritic Serum as a Prophylactic in Children Attacked with Measles. By Dr. NETTER and Dr. NATHAN-LARRIER.—In 855 cases the authors gave 10 cc. of Pasteur Institute serum on admission. Nurslings received only 5 cc. Twelve of these children had diphtheria on admission, and 15 others developed diphtheria afterwards in spite of the injections. Ten cases of diphtheria appeared in a period of time varying from 4 to 21 days, *i. e.*, at the time when the serum is supposed to act as prophylactic. It seems that the preventive action of the serum is especially weak against localization on the conjunctiva, for

in 19 cases 12 had primary diphtheritic ophthalmia. Most (?) of the patients attacked with diphtheria died in spite of the serum. In $1\frac{1}{2}$ per cent. of cases eruptions due to the serum appeared.

DISCUSSION.

Dr. HALLE inquired whether the virulence of the bacilli was tested.

Dr. NETTER replied that this was done in the majority of cases.

Dr. MARFAN said that although the bacterial examination made at the "Enfants-Malades" showed that in many cases of measles there were diphtheria bacilli in the throats of patients who were more hoarse than usual, yet inoculations of serum prevented the development of diphtheritic laryngitis which in these cases would result fatally.

Dr. VEILLON said that bacterial diagnoses were often without value unless combined with inoculations into animals. Especially is this so in conjunctivitis, where there is sometimes a long bacillus which resembles the germ of diphtheria very closely.

Dr. NETTER replied that the virulence of the diphtheria bacilli was indisputable in the cases to which he refers. The tests were made at the Pasteur Institute.

Dr. SEITZ, Munich, said that in the last epidemic of measles there were many cases of croup without diphtheria bacilli.

Dr. TOMMASI, Bucharest, said that croup often appears at the beginning of measles, and these cases are often taken for diphtheria. In such cases intubation is to be preferred to serum, which may prove dangerous.

Dr. MARFAN, in reply to Dr. Tomescu, said that there were two classes of laryngitis in measles, one non-diphtheritic, the other diphtheritic. If the case is diphtheritic both intubation and antitoxin are necessary, even before the diagnosis of the bacteriologist is received.

Dr. VIOLI, Constantinople, asked Dr. Netter what dose of serum was inoculated in the cases reported.

Dr. NETTER replied that 10 cc. were injected.

Dr. VIOLI said that preventive inoculations failed to give positive results in his own experience. Isolation and disinfection gave him the best means of limiting the spread of diphtheria.

15. Some Post-Infectious Toxic States in Children. By Dr. ALVAREZ, Madrid.—These states are more frequent in children than in adults, particularly those which affect the central nervous system. They are, as a rule, short in duration, but may kill rapidly by paralysis. They may affect the sensory, the motor, or the trophic centers and nerves.

(To be continued.)

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ORIGINAL ARTICLES

PERSISTENCE OF SYMPTOMS AFTER REMOVAL OF ADENOIDS AND TONSILS—CAUSES OF.

F. HUBER, M.D.,

New York.

AN excellent authority in discussing the subject of adenoids writes: "When the growths are removed the condition of the patient changes for the better in a few days in a manner that is striking. The face becomes animated, the appetite improves, and the reflex symptoms disappear." The picture in many instances is overdrawn. We are lead to expect too much and the results consequently are often disappointing. In practice we find that in many cases operative interference is followed by speedy and complete relief. On the other hand, in a fair number, though the tonsils have been removed and the naso-pharynx curetted, the symptoms persist perhaps in a modified form; in proof of which many instances might be cited, particularly in older children, in which case the disease has existed for years.

Such an experience unfortunately is rather discouraging to the family and mortifying to the general practitioner, in view of the rosy anticipations. Much had been promised. After the operation, however, it may be found that there is still a good deal to be desired.

Others as well as the writer have doubtless at times been disappointed to find the beneficial effects to be less than was

anticipated. A study of the factors or conditions which tend to keep up the trouble after operation may prove interesting and profitable. Preparatory to this a brief survey of the causes which may give rise to mouth-breathing may be of service.

CAUSES OF MOUTH BREATHING.

1.—Acute.

Diphtheria.
Nasal catarrh.
Trauma.
Foreign body.

2.—Chronic.

Inflammatory (a) Turgescence of the turbinates.

(b) Acute rhinitis or coryza.

(c) Hypertrophied turbinates.

(d) Localized septal thickening (cartilaginous or bony), spurs or deflections.

(e) Small or occluded posterior nares.

Trauma { Deviated septum.
Hematoma.
Abscess.

Neoplasms.

Foreign bodies, generally unilateral.

Adenoids.

While it is true that adenoids are the principal cause of mouth breathing it should not be forgotten, that though the naso-pharynx may be cleared, any obstruction in the nasal passages will interfere with nasal breathing. Thus narrow anterior nares, deflection, thickening, or inflammatory process of the cartilaginous septum, anterior and posterior turbinate-hypertrophies (less in degree than in adults) and bony spurs, or deflections of the bony septum, associated acute or chronic naso-pharyngeal catarrh, and foreign bodies in the nasal passages, may be present and require attention before a complete cure can be expected.

J. N. MacKenzie writes: "More or less permanent obstructions of the nasal fossæ may be conditioned by swelling of the turbinate tissues brought about as the result of collateral engorgement from obstructions in the neighboring parts, as, for example, in the case of post-nasal growths."

Foreign bodies accidentally introduced by little patients

are not infrequent in our experiences at the clinic. Pieces of sponge, shoe-buttons, slate-pencils, etc., have been found, the parents not being able to explain their presence in the nasal chambers. At first sight the result of the removal of the adenoids in cases attended by incontinence of urine, or in such as present the symptom complex of "aprosexia," are not very encouraging. If, however, the cases be followed up, a tonic roborant treatment be instituted and the *morale* of the patients improved, a decided change for the better will be observed in the course of a number of weeks.

In a well-marked case, a child 5 years old, whose growth was somewhat retarded and who was troubled with incontinence of urine, night terrors, etc., the trouble did not cease immediately after the operation. In a week or so we noticed a diminution in the involuntary urination during the day; in about four weeks he was able to control the sphincter during the day but still continued to wet the bed at night. A continuance of the treatment directed to the removal of the nasal catarrh and the steady use of Syr. Fer. Iod. resulted in a cure some few months later. Advised to continue the iron for at least six months longer. Cases might be multiplied. This part of the subject has been studied in detail in a former article (*Archives of Pediatrics*, April, 1889; November, 1889).

Associated naso-pharyngeal catarrh with thickening of the mucous membrane is frequently the principal cause of the persistence of the mouth breathing after the pharynx has been cleared. Treat the catarrh, the thickening will become less and eventually disappear.

Some time ago the writer was consulted by a mother whose child, a girl of 5 years, was troubled with a distressing cough. The history extended over a period of several years. Both tonsils and the adenoid growths had been removed by a well-known specialist during the preceding summer. Though a cure had been guaranteed, the result left much to be desired, and the mother, discouraged, consulted a number of physicians without permanent benefit. A trip to Niagara was followed by the disappearance of the cough and the relief of the symptoms.

Upon her return to the city the symptoms recurred with their original severity. The general health was good; no evidence of pulmonary trouble existed; some naso-pharyngeal

catarrh with swelling of the anterior turbinate was noted. The tonsillar stumps did not project beyond the plane of the anterior palatine arches; no recurrence of the adenoid growths. Treatment was now directed to the relief of the swelling in the turbinates and the cure of the nasal catarrh. In this relation it is interesting to refer to the experiment made on guinea pigs, in whom occlusion of the nares by means of glass beads lead to the formation of characteristic growths in the naso-pharynx. The persistence of the lesion anteriorly in the case quoted gave rise to the annoying paroxysmal cough.

Boric acid ointment, applied by means of a pledget of absorbent cotton on an applicator, warm salt solution (allowed to flow slowly from nasal cup, etc.), afford great relief. Deflected septum, nasal spurs, etc., require further operation. At the clinic the following routine is resorted to: nasal toilet three to four times daily for a week or so before operation, continued for a number of weeks subsequently, and Syr. Fer. Iodid. in appropriate doses is advised and continued for months after the operation.

In our study it may be advisable to direct attention to the two classes met with in practice. In the one the patients are of the phlegmatic type, are slow and sluggish in their mental and physical make up; the other, sanguine or nervous type, are graceful, intelligent, thin, and with small, delicate features. The *alæ nasi* are pinched and the anterior nares and nasal passages contracted in consequence of the absence of the requisite normal intranasal pressure. In the latter, unless the case be attended to at a very early age, the difficulty continues, for the stenosis at the orifice and along the nasal passages is not relieved by the removal of the faucial or pharyngeal tonsils.

Curetting the growths is done *without narcosis*, the Delstaunche modification of Gottstein's curette being preferred for the purpose. Bleeding, as a rule, is moderate in amount, and need not occasion any alarm. For the first twenty-four hours after the operation warm salt water is instilled into the nares every few hours, subsequently two or three times daily for at least a month or six weeks. Syr. Fer. Iodid. is persisted in for a number of months longer. Massage of the facial muscles restores the loss of tone, or tying up the jaw may be required in cases in which the nasal obstruction has been removed and in which the mouth breathing continues as a habit.

Now and then it is necessary to teach such children, in a systematic way, how to breathe through the nose. This is accomplished by firmly compressing the lips, compelling the patient to breathe through the nose. The procedure should be practiced several times daily.* In practice we find that though the naso-pharynx may be readily cleared, other lesions in the anterior nares, the bony and cartilaginous septum, etc., may be present and keep up the difficulty. The removal of such abnormal conditions, with attention to the points treated above, will eventually be attended by gratifying results in those cases in which the symptoms persist after the tonsils have been removed and the vault of the pharynx freed from the hypertrophied tissues.

* In forming a prognosis as regards the relief of symptoms by operation we should not forget that it is essential and important to determine that the lymphoid hypertrophies are the cause of the disturbances complained of—all possible sources of obstruction in the anterior nares, etc., must be taken into consideration.

CARE OF CHILDREN'S TEETH.

Very few mothers realize the necessity of caring for and properly preserving a child's first set of teeth, so that they shall drop naturally out of the jaw without decay when the time comes. As soon as the child is able to eat solid food the teeth should be taken note of. When the little one is three or four years old there will often be decayed spots in the teeth. These cavities should be treated at once by a dentist, and filled with soft, temporary cement that dentists use for this purpose. This care of the first teeth not only prevents the child's acute suffering from toothache, but it keeps the mouth in a cleanly, wholesome condition, which conduces to sound bodily health.

The presence in the mouths of little children of decayed teeth is given on trustworthy authority, as a frequent cause of disease. Were it not for these reasons it would still be desirable to preserve them to the proper time, for where the teeth are removed too early the jaw does not enlarge further, and when the permanent teeth are cut there is not room for them. Children whose first teeth have been properly cared for have stronger and better teeth when the permanent ones come. At least once in the six months a mother should examine the teeth of her children with an eye to possible defects, and when necessary, see a dentist without delay.

CIRCUMCISION FOR PHIMOSIS AND VENEREAL WARTS.*

By WILLIAM R. BLUE, M.D.,

Professor of Genito-Urinary Diseases in the Hospital College of Medicine,
etc., Louisville, Ky.

GENTLEMEN, the patient before you is a Negro boy, 19 years of age, who comes to us with a long adherent prepuce, and also a luxuriant crop of venereal warts around the preputial orifice. The peculiar feature in connection with the case is that these warts spring from the outside of the prepuce, forming almost a complete circle or hood around the opening, instead of from the inside, as usually seen.

I have seen a great many cases of venereal warts and this is the only one where they have grown from the outside of the prepuce. In one case I remember, a man had such an extensive growth of these warts that satisfactory urination was almost impossible; the meatus could not be seen, and upon micturition the urine would find exit through the warty growths in every direction. The mass was very large and presented a huge cauliflower-appearance before removal. Unfortunately no photograph was taken of the mass either before or after the operation; the man was circumcised, and made a perfect recovery.

There are a number of different methods of performing circumcision. That which I ordinarily use is by the clamp, and we will remove this man's foreskin in accordance with that method. We first separate all adhesions between the foreskin and the glans, then beginning at the frenum we inject cocaine under the skin in several places around the prepuce where we shall sever it. For this purpose I have had made a curved hypodermic needle, which, being entered at the frenum, is passed half way around the penis, injecting the cocaine, without making another puncture. The other side is then treated in a similar fashion. Having done this, we reflect the foreskin, and saturating a strip of absorbent cotton with cocaine, we

*Clinical lecture delivered at the Hospital College of Medicine.

place this just behind the corona glandis, then replacing the foreskin over the glans, we pour through the preputial opening a small quantity of cocaine, which is allowed to remain twelve minutes in order to secure a sufficient degree of anesthesia, that the patient may suffer no pain.

Some operators, especially in circumcising children, prefer to give a general anesthetic; others administer a general anesthetic in performing circumcision in all cases. I have never had any trouble in doing the operation upon adults under local anesthesia. In children it is probably better to give a general anesthetic, because, otherwise, it is sometimes impossible to keep them quiet.



You will probably remember an idiotic boy whom we circumcised before the class two or three months ago. When he came to us he presented a typical case of congenital phimosis; the mucous membrane of the prepuce was extensively adherent to the glans penis and there was considerable smegma in the sulcus. He was 17 years of age, a fairly healthy-looking boy physically, but his intelligence was almost *nil*; he could tell us his name, where he lived, etc., beyond this his intellect was practically blank.

He was circumcised, as you will remember, after having separated the adhesions between the prepuce and the glans, and we saw him six weeks after the operation or three weeks

after he was discharged as cured. At that time his mother said his intellect had greatly improved, that she could send him on errands, etc., and he would get the messages straight. Previous to the operation if she had sent him, for instance, to the grocery he would have been just as likely to get oranges as potatoes, and *vice versa*, not being able to remember the articles for which he was sent.

In another case you will recall the fact that a child 5 years old was sent to us for treatment because of severe spasms of nearly all the muscles of the body; he could not talk, could not walk, and had several spasms in a day. Upon examination we found a long, redundant, and adherent prepuce. After circumcision this child was able to walk and talk perfectly well. Two days after the operation the spasms ceased, and he has not had one since.

In a similar case before the clinic about two months ago, a child 15 months old had as many as twenty-one spasms in a day before circumcision, and has not had one since.

We have waited about twelve minutes since introduction of the cocaine, and anesthesia is now probably sufficient to prevent pain. We draw the foreskin forward and apply the clamp obliquely, being careful not to include the end of the glans in the clamp. This is an accident I have known to happen, a portion of the glans being also removed in severing the prepuce. Having properly applied the clamp, we now sever the foreskin along its edge; removing the clamp we trim away the mucous membrane down to within $\frac{1}{4}$ inch of the sulcus. Wherever we find a bleeding point hemorrhage is effectively arrested by torsion with forceps.

The patient complains of no pain, so anesthesia is complete. We find the mucous membrane somewhat thickened. In trimming it away we are careful to avoid severing the frenum. After trimming away all mucous membrane we will close the raw surface with iron-dyed silk, using a continued suture.

You observed that before beginning the operation, indeed, before the introduction of the cocaine solution, we placed a rubber tourniquet around the base of the penis. This is a precaution I always take, and it serves a double purpose, viz., it prevents hemorrhage and also prevents the cocaine entering the general circulation. In over 1000 cases of circumcision

performed under cocaine anesthesia I have never had serious constitutional effects of cocaine, having in every case used the tourniquet. Various operators who do not observe this precaution have reported several instances where the bad effects of cocaine were noticed.

Another method of performing circumcision, which is popular with a number of operators, is by making an incision, beginning at the dorsum, extending entirely around the penis, severing the skin and the mucous membrane at the same time. That is a very good method but has one serious objection, viz., owing to the extreme resiliency of the mucous membrane in trying to sever it in connection with the skin, despite all precautions it will sometimes slip under the knife or scissors and more is removed than is desirable, making coaptation afterwards extremely difficult. For this reason I always employ the clamp method, trimming away the mucous membrane after severing the skin, in that way being certain to secure the desired length.

Circumcision is by no means a new operation; it was in vogue long before the Christian era, not only among the Jews but among other nations, and, as a matter of course, their methods were very crude. In those times there were no scissors, no clamps, no anesthetics—in fact, no surgical instruments, and cases are cited where the foreskin was removed with the sharp edge of a shell. The foreskin was simply drawn forward and the sharp edge of the shell passed through it; of course, they used no sutures after the operation. So far as we know the operation in those days was performed simply as a hygienic measure; later, among the Jews, it became necessary as a religious rite, and among other nations it has always been more or less popular, not only as a hygienic measure but also as a preventive of venereal disease. Perhaps, for the reasons just stated, more operations of this kind are being performed in America at present than ever before.

In connection with the case upon which we have just operated, I would like to mention the following: Three weeks ago I was called to see a man, aged 76 years, an old bachelor, who had never had sexual intercourse in his life, and claimed never to have seen his glans penis. He was suffering at the time with retention of urine. There was no history of gonorrheal or other infection—there could hardly be such a history, as he

had never had intercourse, and gonorrhea especially is only rarely contracted by any other means.

I examined the man per rectum, and found that his prostate was not enlarged. This was his first attack of retention. His foreskin was adherent, and I could feel a number of small bodies under the prepuce, the nature of which at that time could not be determined. The next morning I made a dorsal incision, but did not circumcise him, reduced the foreskin and removed nine calculi about the size of split peas. They were evidently calcareous in character, the nucleus being a particle of smegma. These little stones acted as foreign bodies and produced a spasm of the urethral muscles, and retention of the urine was a natural consequence. He has had no retention since the operation.

The after-treatment of these cases is simple. We shall dress the wound with gauze, using a liberal quantity of boric acid, and as a cover and protection place some absorbent cotton, held in place by a bandage, and shall instruct the man to remove this cotton when he desires to urinate, replacing it after completion of the act. The first dressing, if not soiled, will be allowed to remain intact for two or three days, then we shall have him come here for the second dressing. At the end of five days healing will probably have taken place sufficient to permit removal of the sutures.

In circumcising adults the question of erection of the penis after the operation, and before healing takes place, is one of considerable importance. If erection occurs it may not only cause the patient a great deal of pain, but may also displace the sutures; therefore, it is always wise to prevent such an occurrence if possible. My custom is in such cases to give the patients large quantities of the bromides for at least six days, or until the wound has entirely healed. In children and infants, of course we do not have this difficulty to contend with, and for that reason circumcision, if there are any indications calling for its performance, should be done while the patient is quite young, although I do not believe it is advisable in infants a few weeks old, as is claimed by some operators.

There is another point to which I desire to call your attention in connection with this operation: In many cases where you operate in the white race there may be noticed an extravasation of blood into the connective tissue, between the

skin and the deeper tissues, the penis may turn black over its entire surface, the scrotum may also turn black or dark in color. Without the knowledge that this sometimes occurs, the first case might frighten you considerably. Such an occurrence need cause no serious alarm, for usually in a few days the extravasated blood is absorbed, leaving the parts their natural color.

After removing the tourniquet there is sometimes considerable oozing from the cut surfaces, but this is easily controlled by the application of hot water. The only artery you could possibly sever during the operation is the artery of the frenum, or abnormal branches of the dorsal artery. Care should be taken in all cases to stop every particle of bleeding before applying your sutures, otherwise there is likely to be a great deal of swelling which may displace them, and sometimes the blood clots are a long time in being absorbed. In some cases under such circumstances you may have to chloroform your patient, remove all the sutures, cleanse the wound thoroughly, arrest the bleeding, and suture the second time. I say it will be necessary to give a general anesthetic, because it is well known that cocaine has no effect whatever upon incised mucous membrane and skin. In most cases there will be but a little capillary and venous oozing, which, if due care is exercised, is easily controlled at the time of the original operation.

You will find that most text-books recommend interrupted sutures in performing circumcision; but I find the continuous suture is the best, and it certainly is the most rapid—a feature of considerable importance when you are operating under cocaine anesthesia. Another advantage is that in removing the sutures at the end of five to seven days, three or four cuts only are required, then you catch the ends of the sutures with forceps and easily draw them out, whereas in interrupted sutures you have to cut each one before they can be removed.

In applying the sutures the best plan to follow is the one you saw me observe in this case, viz.: begin first by introducing the needle into the raphè, then the frenum, and with a continuous suture pass entirely around the cut surfaces of the skin and mucous membrane. When each side has been united in this way, you have an even surface entirely around the penis, and in the majority of cases union will take place by first intention.

You observed that we used boric acid in dressing this case. I believe this is better than iodoform in many respects, although some operators employ the latter. You will find, especially in your private practice, that patients will seriously object to iodoform on account of its disagreeable odor. I remember one case in which I did a secondary operation, another gentleman having performed an incomplete circumcision, where the patient told me that he was kept in the house twelve days on account of the odor of the iodoform used by the first operator.

These patients should be kept quiet, if possible for a day or two, when they may be allowed to go about, with instructions to report every few days until healing has taken place. I remember having, several years ago, circumcised a man about thirty years of age, who was not kept from work a single hour. He came to my office on his way to dinner, the operation was completed in a few minutes, the patient went to his home, ate his dinner, and at the usual time reported for duty at his place of business that afternoon, not having lost even a few minutes' time because of the operation.

APPLICATION TO THE EYES.

The cold cloths should be large enough to cover the lids and thick enough to retain the cold for a few seconds. Eight or ten such cloths are laid on a block of ice in a basin by the bedside and are placed on the lids one after the other, being changed rapidly so as to keep as much cold to the eye as possible. They must be frequently destroyed if there is much discharge, and new ones made. The action of the cold is to reduce the swelling of the lids and conjunctiva; it is especially important if much chemosis is present. If the cornea becomes infected the iced cloths must be stopped, as the cold depresses the cornea and tends to increase the ulceration. Hot applications are usually substituted under these circumstances. Pads of cotton saturated with very hot water are applied to the lids and rapidly changed for fifteen minutes every three hours. This stimulates the cornea and also decreases the swelling of the lids, though for the latter it is not so effective as cold. The pupil is usually dilated with atrophine as soon as corneal involvement is noted.—Dr. E. S. THOMSON, *Trained Nurse*.

ADENOIDS.*

BY ROBERT M. LAPSLEY, M.D.,
Keokuk, Iowa.

WHEN Dr. Meyer, of Copenhagen, Denmark, in 1868, called attention to the growth of adenoid tissue in the vault of the pharynx, he paved the way for treatment for a class of cases that had much to do with improper development of the nose, throat, and ears, and not only this, but the whole system. Mouth-breathing we know to be one of the most vicious of habits of childhood and to interfere much with proper development. I am most anxious to emphasize the local effect on the nose and ears. Dench, in his text-book on diseases of the ear, states that more than one-half of the cases of diseases of the tympanum are due to adenoid vegetations in the vault of the pharynx. This seems probably true when we examine these patients in childhood where the adenoids are still plainly shown and the connection easily traced.

Granting that fact and considering the importance of hearing, adenoids are among the most important of infantile affections. With all the literature written in regard to adenoids since Meyer's important work and the brilliant results these operations give, we still find these cases largely neglected and still find many children going on to permanent and irreparable deafness, with either no attempt to check it or such futile attempt as the removal of the pharyngeal tonsils only. The percentage of people hard of hearing will likely be greatly lessened as the importance of this subject becomes more generally recognized, and these children are treated properly in the initial stages. "Delays are dangerous," says the child's copy-book, and in this trouble we have no better motto to follow and to impress on the parents. The fact that nature is very kind in diseased conditions in general has led the laity and even the profession to procrastinate in cases of importance and expect the "child to outgrow it." In adenoids, however,

* Read before the Des Moines Valley Medical Association, Ottumwa, Iowa, June 20, 1900.

even if they outgrow the original trouble, the results will be shown in a deformed and badly developed face, in poor teeth, a narrowed nose, a chicken-breast, and permanent impairment of hearing.

The cause of the production of adenoids is a trifle uncertain. That they occur in childhood is generally known, and it is likely that repeated colds increase the amount of lymphoid tissue that is already too abundant in the naso-pharynx; and, conversely, the presence of adenoids is the cause of repeated colds, so that a patient with a well-marked case of adenoids has a cold a good part of the time. Mouth-breathing with all its evils is resorted to and the symptoms are mostly deduced from that.

The facial expression is stupid, the normal lines from the alæ nasi are changed, the mouth is not closed, the upper teeth are too prominent and irregular; the parents say the child catches cold easily, and that it snores at night, perhaps very loudly, and in many cases the hearing is dull at times, and there may be earache followed by a discharge either acute or chronic. On looking in the mouth the pharyngeal tonsils are possibly enlarged, and many examiners have removed these and examined no further and thereby left the chief offender. The diagnosis is made complete when the finger is introduced back of the soft palate and a soft tumor or tumors are felt, and the finger is withdrawn with blood and mucus on it. The amount of blocking of the post-nasal space can be determined by this examination.

In cases at all marked the prognosis is poor if let alone but no cases offer a more brilliant hope if operated on at an early date before permanent changes in development are well marked.

The irregularities of teeth, that are so common, are frequently due to this trouble and efforts at treatment would be much more successful if the original cause was removed before attempts at regulation of the teeth. The teeth, however important, are less so than the ears, because we can put in no false ears to take the place of those destroyed by continued middle-ear disease.

Treatment, then, is imperative in a large percentage of the cases and is almost altogether surgical. The methods of surgical treatment are so well-known now that a description is

unnecessary. What I particularly want here is to call attention again to the importance of care in examination and to advise as to early removal of adenoids in the interest of bettering the condition of the ears of the rising generation.

I have hardly mentioned the fact that these children are not only stupid in appearance, but really are stupid, and the only salvation from partial or complete idiocy in a certain percentage of cases is early operation. The approved form of operating under a general anesthetic does not seem best in all cases. The lymphoid tissue is not very sensitive, and in my present practice I sometimes remove small amounts at a sitting for several sittings, until the vault of the pharynx is clear. This is applicable to those patients where for some reason we do not want to resort to general anesthesia.

The principal point to be noticed, then, is in all cases with above symptoms and history and also in cases of ear disease in children, is to carefully examine the naso-pharynx and to advise early removal of all lymphoid tissue in the throat.

CHOREA CAUSED BY FRIGHT.

A good deal of doubt has been expressed by different observers upon the alleged production of chorea by fright, chiefly on the ground that fright is very often asserted to have set up the disease in a child when closer investigation shows the cause of the fright to have been very slight. It must, however, be borne in mind that what may seem to a healthy adult to be a small or negligible case for shock or fear may to the child have been a very great cause; or, to express it otherwise, what does not suffice to frighten an adult may produce very real terror in a child. There are, I imagine, few medical men of any experience who would not admit that fright is capable of producing genuine chorea, in the same way as we all know that it may, in certain conditions, set up paralysis agitans, dementia, genuine epilepsy, profound shock, and even death. However, we may try to explain the manner in which fright acts, we are constrained to allow that it may result in these severe nervous disturbances, and more, that it may lead to disease which has a distinct anatomical lesion.—Dr. O. J. KAUFFMANN, *British Medical Journal*.

EDITORIAL COMMENTS

The Physician and the
"New Diagnosis"

There has been some apt and timely comment on this subject in the Medical Journals lately. We venture to add some recent experiences related by a worker in a clinical laboratory not far from New York which makes microscopic examinations for physicians and surgeons.—The patrons of this laboratory may, he says, be divided into three classes: (1) Those who have studied microscopic diagnosis with some intelligence, and whose specimens are properly prepared for the work requested,—who know what they want and ask for what they need (smallest class). (2) Those whose notions of what the microscope may reveal are in general correct, but who have not been at the pains to learn how to prepare their specimens. These are the men who send diphtheria cultures with the swab thrust into the culture-medium as deeply as possible; or "blood to be examined for malaria" with the blood firmly coagulated between two adherent cover-glasses (larger class). (3) Those who know neither how to prepare their specimens nor what help the microscope can possibly afford them in a troublesome diagnosis. These men send fermenting urine in dirty bottles to be tested for "typhoid bacilli"; plump and blooming boys to "have their red cells counted"; patients who have not had a chill or an elevated temperature for months to be examined "for malaria"; or bits of tough beefsteak passed *per rectum* as probable specimens of "carcinomia of the colon." And (to our professional confusion of face) this is the largest class!—Perhaps these men last named have the ultimate motive of impressing the patient with a notion of their own omniscience; but there is no honest word to be said for such performances except—*quackery*.

B.

What has really Been
Accomplished by the
"New Diagnosis"

It is perhaps evident enough without explanation what we mean by the "new diagnosis." It is the recognition of various types of disease by the assistance of the new discoveries in bacteriology, physics, and chemistry,—many of them rendered practicable by the newer forms of the compound microscope. These discoveries are familiar enough, the tubercle bacillus, the malarial parasite, and many more. But the speed with which announcements of scientific achievement have succeeded one another has perhaps blinded a part of the profession to the fact that there is just as much room to-day in the practice of medicine for the educated fingers, eye and ear as there ever was. The new field of work has not replaced the old: on the contrary both fields remain, both must be examined, both carefully gone over from end to end before a diagnosis can as a rule be considered secure. Diphtheria bacilli in the throat do not prove diphtheria unless the patient has symptoms; the diazo-reaction in the urine, or the Widal test with the blood, must be taken as coordinate evidence along with these spots, the nose-bleed, the splenic tumor, and the fever, before we may certainly say "typhoid." The new diagnosis has *complemented* the old in a manner that has proved, and will prove, infinitely beneficial. But there is no fair ground to hope or even to wish that the chemist and the microscopist shall supercede the alert and well-educated "all-round" physician. As they say in Germany, "You can't turn a man into a test-tube." B.

Defective Eyesight and
Hearing in School Children

It is gratifying to note that the work of Dr. Frank Allport on this subject is gaining the recognition his wise and philanthropic efforts have merited. It would not be fair to other writers and workers in the same field to say that he has stood alone in his advocacy of systematic examinations of the eyes and ears of school-children. Yet his papers in the *Review of Reviews*, the *Educational Review*, and elsewhere during

recent years have done much to bring school boards and students of education to a keener realization of the dangers of neglect. We quote the following from Dr. Louis J. Lautenbach's address at the last meeting of the A. M. A. in Atlantic City (*Journal A. M. A.*, Dec. 22, 1900):—

“That part of the children's physical being which more especially concerns the teaching authorities is that concerned with the acquisition of knowledge, and therefore, any deficiency in sight or in hearing interferes with the work they are expected to accomplish, and often explains why some children are so backward, even at times almost stupid, with their work. The advantage of testing the sight and hearing and the observation of any deficiency, with a further step looking to its correction, must at once appeal to all who have the welfare of the school child at heart. Recognizing these facts, several Western cities, particularly Minneapolis, Milwaukee and Chicago, have tentatively applied methods and suggestions looking to this end with advantage for a varying period of years, until now Dr. Allport's methods, or modifications thereof, have been adopted in them all. As defects of vision are more obtrusively apparent than those of hearing, eye examinations alone were originally advocated. Now, the ear being included, the observations are much more valuable.”

It seems pitiful that with the progressive examples before the New York Educational Authorities of “Milwaukee, Minneapolis and Chicago” our own school system should be so “politics-ridden” that virtually nothing is doing in this tremendously important matter. We learn that orders were passed along last autumn from the Health Department to the present corps of Medical School Inspectors that school rooms were to be inspected as to the relative situation of seats, windows and black-boards. The inspections were made and reports sent in,—seemingly to be pigeon-holed! Nothing has been heard of this “collective investigation.” The very fact that it was thought needful to make it reflects bitterly upon the original arrangements of the Building Committee of the Board of Education. Could it be that the carpenters and the janitor were deputed to do this work while the proper inspectors were “busy”? Meanwhile hundreds of unfortunate children with bad eyes and ears are struggling to meet the impatient requirements of overworked and uninformed teachers, and the Public Schools of New York are keeping up their reputation of being among the worst in the United States.

B.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, April 12, 1900.

WALTER LESTER CARR, M.D., Chairman, *pro tem.*

Intussusception.—Dr. JOHN F. ERDMANN presented a case of intussusception occurring in a girl of 7 years, upon whom he had operated successfully. The attack had begun with sudden abdominal pain about 5 p.m., and had been followed a few hours later by a stool containing a small quantity of blood. When seen by Dr. Erdmann, twenty-nine hours after the onset, her countenance had been anxious; pulse 166; temperature 100° F., and respirations shallow. The abdomen was slightly distended. Both inspection and abdominal palpation disclosed a tumor in the left lumbar and iliac regions and this tumor could be felt per rectum. Under chloroform anesthesia an incision had been made through the sheath of the left rectus muscle, the posterior portion of the sheath had been divided, and the peritoneal cavity opened. Examination showed no general peritonitis. The tumor involved the descending colon, sigmoid and rectum. Reduction was effected without difficulty. There were two rents in the serosa, due to the distention resulting from the packing of the gut in the sigmoid. One of these tears was about 1½ inch long and was in the long axis of the gut; the other was about 1 inch long and was transverse. The intussusception began at the hepatic flexure of the transverse colon, and here the intestine was ecchymotic and very edematous. The rents were closed with fine catgut. His previous experience had shown that it was not necessary to shorten the meso-colon. The whole operation occupied only thirty-seven minutes. The patient was now rapidly recovering. Dr. Erdmann said that he had operated upon eight cases of intussusception, the oldest patient being nine years and the youngest fourteen weeks. Fifty per cent. had recovered. In

three of the fatal cases the patients had been almost moribund at the time of the operation.

Hereditary Lues.—Dr. F. L. WACHENHEIM presented a girl of 9 months, the youngest of four children, the others being in good health, and the family history good. The child had always been subject to attacks of vomiting, though the bowels had acted normally; the abdomen was said to have been large at the time of birth; when first seen by him one week ago there was marked emaciation and a large tympanitic abdomen. Examination had revealed a hard spleen extending low down in the iliac region, and a firm liver reaching three inches below the free border of the ribs. Nearly all the lymph nodes were enlarged, and there were signs of moderate rachitis. Examination of the blood and urine was negative. The diagnosis lay between pseudoleukemia, splenic anemia, amyloid degeneration, and hereditary lues. The condition of the liver was against the first two, and the child's age was against amyloid degeneration.

Sporadic Cretinism.—Dr. ROWLAND G. FREEMAN presented a case of this kind which he had first seen on February 10th. The mother stated that the child seemed dull and had not apparently grown since the age of five months. The face was thick, the hair thin, the skin dry and yellowish, the lips thick, the tongue swollen, the nose choked with mucus, and the facial expression dull. The child weighed $8\frac{1}{2}$ pounds at birth, and only 13 pounds when 5 months old, and it had lost 4 ounces in the past five months. Her length was 23.5 inches; the body temperature was 95° F. On February 16th treatment with thyroid extract had been begun, and the dose had been increased up to 2 grains. In the first eight days thereafter she had lost four ounces, and in fifteen days she had lost $8\frac{1}{2}$ ounces but had gained $\frac{1}{2}$ inch in length and appeared brighter. At the end of twenty-six days she had lost 1 pound and 1 ounce, and was very restless. At the end of the first eight days, it should be noted, the obstinate constipation had been overcome and at the end of forty-seven days the evidences of cretinism had disappeared, as shown by the photographs.

Dr. CHARLES HERMANN also presented three cases of sporadic cretinism, occurring in children of six years, three years,

and seven weeks respectively, all members of the same family. The second child had been described by Dr. Koplik in 1896. The family consisted of ten children in all, and of the five who had died it was probable that two had been cretins. The girl in question had been born normally, but had developed icterus at the end of four days, and had come under observation, still jaundiced, at the age of two months. She presented nearly all the signs of cretinism. Few cases of cretinism had come under observation, the speaker said, before the age of six months; hence the child of only 7 weeks was particularly interesting. Its length was 50 cm.; the extremities were short, the abdomen protuberant, the skin yellowish, the forehead low, the hair dry, the nose broad and flat, the tongue large and thick. The chest was well-formed, measuring 34 cm. The temperature in the rectum was 99.8° F. at present, but had been as low as 96° F.

Dr. WILLIAM B. NOYES presented a case of cretinism occurring in a child now 2½ years old. When first seen by him, at the age of 2 years, she had appeared to be only 6 months old; her eyes were dull and listless, the nose short, the tongue and lips swollen, and the fontanelles wide open. The length had been 24 inches; there had been no evidence of rachitis; at birth the child had weighed 8½ pounds and at two months the child had reached 14 pounds. For the next year its weight had remained stationary. Three days after beginning thyroid treatment the tongue and lips had become more natural, the neck was 2 inches and the abdomen 3 inches smaller in circumference. At the end of ten weeks it was reported that her facial expression and mental condition had entirely changed, and that she had cut two lower incisors without trouble. She was perspiring freely, a thing she had not done previously. On January 5th it was noticed that her weight was 9½ pounds, and that since September she had reached about 28 inches in height. On March 2nd her weight was 24¾ pounds, her length was 32 inches, and she had ten teeth. On October 27th she had returned, having lately developed cretinoid symptoms again. The thyroid extract was increased gradually to 3½ grains, with consequent improvement in the general condition. She celebrated her fifth birthday on February 1st by walking alone for the first time across the room. On July 4th the child

had been looking poorly, the thyroid having been stopped for three weeks. Immediately upon resuming its administration the improvement had been very marked. Although still unable to talk more than a very little she looks bright and intelligent, weighs 40 pounds, and measures 3 feet 8 inches in height.

Dr. AUGUST CAILLE thought it was a mistake to lay much stress on the subnormal temperature, as this was not an uncommon condition among sick children in hospitals. It was also bad to send cretins to hospitals for treatment; they should be treated at home and kept in the open air as much as possible.

Lumbar Puncture.—Dr. WILLIAM P. NORTHRUP read a paper on this subject, more especially in its relation to cerebro-spinal meningitis. He said that in the Boston epidemic in the spring of 1897 there had been 197 cases, and that in March of that year he had himself met with thirty cases, so that he was inclined to believe that the same epidemic influence had prevailed at that time in both Boston and New York. In epidemic cerebro-spinal meningitis, as compared with ordinary meningitis, there were greater exudation, more extensive involvement of the brain, meninges, and nerves. It occurs in the winter and spring, most frequently in the month of April, and is most common between the ages of thirty and thirty-six years. The evidence was not conclusive as to the contagiousness of this disease, but it was surely infectious and the result of a specific infectious agent. It was not improbable that the infectious organism gains entrance by way of the ear and nose. In 35 of the Boston cases cultures made at autopsy showed the presence of the *diplococcus intracellularis meningitidis* in all but four. In 55 of the cases in which lumbar puncture had been performed the *diplococcus* had been present in 38. Early in the disease the *diplococci* were comparatively scanty and the fluid drawn was turbid; later, the fluid became less turbid and epithelioid cells and blood cells took the place of the polynuclear leucocytes found at first. In cases that come to autopsy the average duration of the acute ones had been six and one-half days, and of the chronic twenty-eight and one-half days. The disease affected first the meninges, then the brain, and lastly the nerves. The quantity of fluid in the subarachnoid

space is markedly increased and the fluid is cloudy and purulent. The cranial nerves most often involved were the optic, the fifth, and the auditory. There were acute degenerative changes in the kidneys and hemorrhagic spots on the skin. In 70 out of 111 cases vomiting was present and stupor or unconsciousness in all. There was pain in the neck in 83 of the cases, and in one, although there had been no neck symptoms during life, the autopsy showed a marked involvement of the cervical portion of the spinal cord. Herpes was present in 35, and petechiæ in 11 cases. In two of the cases there was croupous pneumonia. Otitis media developed in three cases. A prominent point in the symptomatology was the marked disproportion between the pulse and temperature, the latter being sometimes very high while the pulse remained nearly normal in frequency. To establish the diagnosis resort should be had to lumbar puncture. This procedure the speaker considered to be easy of performance and devoid of danger, and especially valuable in the early stages. He had resorted to it in his own 30 cases and had observed 20 other cases in which it had been used, yet he had never seen any bad effects from it. He did not see, however, that it had any therapeutic value.

Dr. LEWIS A. CONNER described the technique of lumbar puncture. He said that the point selected for the puncture should be one of the three lower lumbar spaces, and the tip of the needle should point in such a way as to do the least damage. Unless the patient were comatose or delirious the sitting posture should be assumed and the body bent far forward. The operator should stand on the right side of the patient. The skin should be anesthetized with cocaine, but general anesthesia was entirely unnecessary. At the lumbosacral space the fluid would be found richer in sediment. In selecting the site for the puncture the operator may count the spinous processes from the twelfth dorsal vertebra, to which is attached the last rib, downward; or he may take a line across the highest point on the iliac crests. The latter passes near the edge of the fourth lumbar spine. An antitoxin needle should be introduced a little to one side of the median line, its point being directed upwards and towards the median line. For purposes of diagnosis it was only necessary to remove 10 or 15 cm. of fluid.

Dr. AUGUST CAILLE said that he had employed lumbar puncture since 1895 on about 16 or 18 cases, mostly children. It was well to do the operation first upon the cadaver. His landmark was the straight line from one crest of the ilium to the other. He places one finger above this line and the tip of another finger below the line and in this way controls the interspace. It would be found very convenient to make a mark with the finger-nail on the skin at the point where it is desired to make the puncture, as such a mark would remain visible about five minutes and would serve as an important guide. The needle should not be attached to the syringe at the time of its introduction. If the fluid were turbid this indicated a meningitis. If it were simply bloody this might only mean that a blood vessel had been injured when making the puncture. The fluid should be allowed to run into a sterile vessel. This puncture was a diagnostic aid of considerable value, but he had never seen any good results from the therapeutic use of this measure either by itself or combined with the introduction into the spinal canal of such medicaments as iodoform, salicylate of sodium and iodide of potassium.

Dr. CARTER said that in the Presbyterian Hospital it was the practice to place the patient on the side and to enter the needle in the fourth interspace a little to one side of the median line. In one case of tubercular cerebrospinal meningitis, in which the patient had been in convulsions for two days and all attempts at relief had failed, lumbar puncture had afforded immediate relief, though the patient had died four or five weeks later.

A PREVENTIVE FOR INSECT BITES.

Mense recommends the use of a solution of quinine sulphate in glycerine as the best preventive against insect bites. Whether this is due to the bitter taste of the quinine or to its toxic action on the insects has not been established.—*Pharmaceutical Journal*.

NEW YORK ACADEMY OF MEDICINE—SECTION ON
PEDIATRICS.

Stated Meeting May 10, 1900.

WALTER LESTER CARR, M.D., Chairman, *pro. tem.*

Two Cases of Gastric Ulcer—Remarkable Subnormal Temperature.—Dr. LOUIS FISCHER presented a girl of nine years who had been brought to him on November 24, 1899. According to the history she had been sick since the age of two years. At that time she had fractured both legs, and shortly afterward had contracted typhoid fever. She was a bottle-fed baby, reared on condensed milk. The first dentition had begun after the age of one year, and she had not learned to talk until four years old. There had been for a long time bloody vomiting, or a bloody discharge from the mouth. The stools contained mucus, and were dark and tarry. The vagina was red, and there was leucorrhea. About three years ago the child had had scarlet fever, diphtheria, and pneumonia. In the past six months her body weight had fallen from 54 to 38 pounds. The child when first seen had night sweats, the heart action was feeble, and there was a peculiar fetor to the breath. The stomach was distended and tender. Her attending physician had made a diagnosis of gastric ulcer. Chemical examination of the stomach contents after a test-meal of a cup of tea and a roll showed hyperchlorhydria. A few days after this the child had developed an excessive appetite, taking in three successive days ten, six, and four quarts of milk respectively. About the first week in December anorexia had taken the place of this unnatural appetite, and there was almost constant nausea and vomiting. The latter continued for nearly one week after discontinuing all food by the mouth. Rectal alimentation had been continued for two weeks, and suppositories containing one-quarter of a grain of nitrate of silver had been used. At one time during this period her temperature had fallen to 77°. This remarkable temperature, 77°, had been taken in the axilla, and had been noted by the attending physician, Dr. Mayer, and by Dr. Fischer several times. At this time, of course,

the child was in a state of collapse. Under careful medicinal and dietetic treatment the child had slowly recovered, and was now practically well.

Dr. FISCHER also presented a girl of fourteen years suffering from gastric ulcer. She had not been sick until five years of age, at which time she had been severely ill with measles. At the beginning of the ninth year she had begun to vomit. She had improved under treatment at various dispensaries in this city. About three years ago she had discharged dark coagulated blood from the stomach at intervals. Vomiting had been frequent and annoying, recurring sometimes several times a day. There was constant anorexia and distress after taking food, particularly solid food. The heart's action was feeble and rapid, but there was no murmur to be heard. An examination of the stomach contents after the test meal showed an excess of hydrochloric acid. By the use of a diet chiefly fluid, and insisting upon her remaining in bed for a considerable time, she had improved markedly. The medicinal treatment had consisted chiefly in the use of bismuth, calcined magnesia and resorcin. On March 25 she had been allowed to return to work, and this had been followed by a return of the old symptoms, including the passage of dark tarry stools. Examination of the blood showed marked polynuclear leucocytosis and a decided diminution in the percentage of hemoglobin. There was a constantly painful and tender area over the stomach, about two or three inches in diameter, and it was at this point that she experienced the greatest distress after eating.

Dr. LA FETRA commented upon the youthfulness of these patients, and the very good effect of rest and dietetic treatment. It was not improbable that the cases would eventually come to operation.

Dr. HENRY HEIMAN suggested that possibly the existence of a cardiac lesion in the first case might give rise to an embolus, and so cause the ulcer.

Dr. FISCHER said that in young girls, particularly those suffering from chlorosis, there was often a tendency to epis-

taxis and other hemorrhages. He had been unable to find any evidence of syphilis or of tuberculosis or hemophilia in either case. He regarded both children as primarily chlorotic.

DR. CARR said that the first child had had so many illnesses that it would be difficult to determine the etiology. It was extremely doubtful if these cases were permanently cured, although the outlook for the first child seemed very good.

DR. FISCHER said that an examination of the literature showed quite a number of cases of gastric ulcer in children, even as young as two or four months.

Peculiar Temperature Range, Probably from the Grip.—DR. L. E. LA FETRA submitted for inspection a temperature chart showing excursions in the twenty-four hours from 94.4° to 106°F. A casual inspection of the chart would suggest an intense septic process. The child had begun with a pneumonia of the right upper lobe, and defervescence had occurred about the thirteenth day. After an interval of a day or two the large excursions of temperature referred to had been observed. Empyema had been at once thought of, but there were absolutely no physical signs of this condition. A diagnosis of grip had been made, and on removing the child to another locality the temperature had rapidly subsided. The child had returned to the same room three or four months later, and had only been home for two weeks when it had again developed this strange temperature. The child was then sent away from home a second time, and on its return to the city went to live in another house. It has since remained well.

DR. CHARLES HERMANN said that such intermittent temperature was not at all uncommon in the grip, but the peculiar feature was the recurrence of the symptoms on the return to the sick room.

DR. JAMES J. WALSH thought the grip manifestations this year had appeared largely in connection with the nervous system.

Dr. LA FETRA said that the child had shown during the pneumonia the ordinary leucocytosis, but not during the attack of grip. Repeated examinations had been made for the malarial organisms, but with negative result. Otitis had been very common after the grip this season, as had also the nervous manifestations and the skin eruptions. The nervous symptoms at times had taken the form of a mental depression almost amounting to a melancholia.

Multiple Bone Lesions, Probably Specific.—Dr. WALTER DUNCKEL presented a boy whom he had seen last June with what had been supposed to be a tubercular osteitis of the elbow joint. Inquiry showed that when two years old the boy had been operated on for some disease of the bones of one of one of his toes. Subsequently the disease had developed in the great toe of the right foot, and in the left elbow. There was nothing in the history pointing definitely to syphilis, but the child had been put on iodide of potassium, five grains three times a day. After six weeks of this treatment, mercurial inunctions had been added, and there had been improvement noted. He had then lost sight of the case for six or eight months, when the boy had returned with a discharging sinus in the right foot.

Dr. S. LLOYD said that it was hardly fair to say positively that the good results from antisiphilitic treatment necessarily prove a case to be syphilitic, for tuberculous cases often show improvement under the same medication. Sometimes the tubercle bacilli were not obtained in the discharge from a sinus, while scrapings made from the adjacent tissues showed these bacilli. He was under the impression that the majority of these cases of multiple joint lesions are decidedly tubercular.

Dr. HERMANS said it was quite generally admitted at the present time that the prolonged administration of the iodides would improve tuberculous cases, and hence the therapeutic test was far from convincing.

Dr. DUNCKEL replied that the rapid improvement noted seemed to point rather to the specific nature of the disease,

although he was willing to admit that the location in the bone was opposed to this view. The liver and spleen were enlarged.

Dr. C. C. CARMALT said that he could recall several cases of this kind in children who presented distinct syphilitic stigmata. Quite a number of syphilitic children, particularly in hospitals, become subsequently infected with tuberculosis. At St. Mary's Hospital for Children he had seen several cases presenting this double infection. In his experientiae the Italians and Poles seemed more prone to bone disease than other nationalities, and that it runs a specially chronic course, but, on the other hand, these children are particularly tolerant of repeated operations.

Rubber Nipple for Use with Infants Having Cleft Palate.—Dr. S. LLOYD said that the difficulty experienced in feeding by means of a spoon children with cleft palate in hospitals had led him to devise a nipple which would obviate this. The modification in the nipple consists in the attachment of a "wing" of sheet-rubber which fills the cleft during the act of suckling. With the ordinary rubber nipple this device does not work well, because of the collapse of the nipple. By putting the attachment on the "non-collapsible nipple" the desired object is accomplished.

Dr. CARMALT said that, to the best of his recollection, a similar device had been described in one or two text-books on surgery.

Dr. WALSH recalled a case seen in Philadelphia in which the father of the child, being a shoemaker, had made a leather attachment very similar to the one just presented.

Dr. LLOYD replied that he had had this idea in mind for a number of years, and had a vague notion that he had seen it somewhere, but had failed to find it when searching the literature.

ABSTRACTS

A THREE-MONTHS INFANT WITH A CAUDAL APPENDAGE.

WATSON (*Johns Hopkins Hospital Bulletin*, May, 1900) exhibited an infant with this rare anomaly before the Johns Hopkins Medical Society, March 5, 1900. His description of the case is as follows:

"It is a healthy male child a little over 3 months old. The tail springs from where a tail should, just posterior to the anus, and consists of two segments, a longer, thicker, more fleshy proximal segment, and a distal segment which is shorter, thinner, and more fibrous. It is covered with normal skin. The length of the tail, when the child was three weeks old, was $1\frac{3}{4}$ inches. Forty days later it was 2 inches, and now it is $2\frac{1}{4}$ inches long, having grown $\frac{1}{2}$ inch inside of three months; apparently out of proportion to the growth of the rest of the body. It seems to have no connection with the coccyx, although it springs from the skin right over its tip. There seems to be no bony or cartilaginous tissue in it. It is well supplied with muscular tissue, and in fact, the infant seems to express its emotions with the tail, for when the child is crying the tail shrinks up $\frac{1}{2}$ inch in length, the distal portion partially telescoping within the proximal one. At other times it lies relaxed at full length or curls out upon the buttocks."

The parents of the child had brought it to Dr. Watson to have the tail amputated.

IDIOPATHIC DILATATION OF THE COLON.

FUTCHER (*Johns Hopkins Hospital Bulletin*, May, 1900), reports a case of a boy, aged 4 years, with marked dilatation of the large intestine. When he was 1 year of age it was noticed that the abdomen was very large, and his appearance soon became the talk of the neighbors. He had been suffering with constipation, going for six or seven days without a movement, and then such periods would be followed by severe attacks of diarrhea. On admission, there was a very striking distention of the abdomen, particularly above the level of the umbilicus. Daily irrigations for a week succeeded in diminishing the size of the abdomen somewhat. The case is one of so-called idiopathic dilatation of the colon. There are three or four different types of colon dilatation. In the first class may be placed those cases in which there is simple gaseous distention. In the second group come those cases in which there is distention of the colon from contents of some form, either fecal or foreign bodies introduced from without and more rarely by gall-stones. In the third group are those cases which result from organic obstruction in front of the distended bowel. Then there is the fourth group of so-called idiopathic dilatation, of which this is the type.

Some believe that in these so-called idiopathic cases there is some actual constriction or stricture of the bowel in the region of the sigmoid flexure. The colon becomes very markedly hypertrophied, that is, the muscular tissue of the wall is very much increased in thickness, but in the majority of cases no change has been observed in the mucosa.

As to treatment, there is not very much that can be done, and the cases generally terminate fatally early in life. If kept under careful observation, they may live with comfort for a considerable number of years. Surgical interference is advisable in some cases. Treves had a case in which he excised the greater part of the colon with a successful result. The operative procedure usually performed for relief of the symptoms is that for an artificial anus.

SOME DESULTORY REMARKS CONCERNING DIPHTHERIA.

J. WILKINSON JERVEY (*New York Medical Journal*, June 2, 1900) calls attention to the atypical forms of diphtheria, their diagnosis and their management. In addition to the unusual forms classified by Koplik, the writer speaks of the occurrence of a mild chronic type of diphtheria, with or without accompanying membrane. The membrane in these cases probably exists more frequently in the nose and naso-pharynx. The condition may be present for weeks, perhaps even months, with occasional exacerbations which may develop into a more or less typical attack of the disease. These cases are quite capable of spreading a severe type of infection. The writer saw two cases of this kind and reports the history of one of them. The membrane was found in the right nostril and contained the bacilli of diphtheria. The patient recovered after one injection of antitoxin. The writer believes that many cases of diphtheritic sequelæ are not recognized as such because they often follow mild cases which had not been diagnosticated. He also suggests the possibility of a relation between rheumatism and diphtheria.

"Diphtheria is a specific infectious disease giving rise to serious local disturbances by the formation of fibrinous exudates, and showing marked systemic toxemia, all of which is most commonly seen in children from one to fifteen years of age. Rheumatism is a specific disease, due to some yet unrecognized infective agent, causing marked toxemic symptoms, with an excessive amount of fibrin in the blood and fibrin flakes in the synovial fluid of joints attacked with inflammation. It is seen most commonly in persons from fifteen to forty years of age.

"Mark how the ages most commonly attacked by the disease fit in with each other, diphtheria being most frequently seen from the first to the fifteenth year of age, rheumatism from the fifteenth to the fortieth. Might it not be reasonable to suppose that physiological changes, obscure and probably never to be elucidated, taking place at the age of puberty, cause a changing susceptibility to the same infection, giving rise perhaps to immunity, or perhaps only to different manifestations of the same specific intoxication? Certainly, the deposition of the infective agent of diphtheria occurs just as frequently upon the mucous membrane of the adult as upon those of the child. Therefore the prophylactic treatment

consists in careful cleansing of the mouth at frequent intervals. Is not this suggestive?"

In suspicious cases bacteriologic examinations must be made. The writer favors the bacteriologic investigation of the throat of all persons who have come into contact with a diphtheritic patient, and if bacilli, their isolation and disinfection, just as though they were sick. Regular examinations of the throats of school children should be made once a year. Protective inoculation of antitoxin should be given to every person who has come into contact with a known case of diphtheria, and liberal doses of antitoxin should be injected in every case suspected of being diphtheritic, that is, every case which presents even the slightest probability of being diphtheria. In addition to the administration of antitoxin and the treatment of complications as they arise, the writer employs locally applications of a 1-500 or a 1-1000 bichloride solution in equal parts of glycerine and water as routine practice in checking the rapid spread of the membrane.

GRAVE DISEASES IN YOUNG CHILDREN OFTEN DUE TO LATENT AND UNSUSPECTED INFLAMMATION OF THE MIDDLE EAR.

CHARLES H. BURNETT (*Pennsylvania Medical Journal*, May, 1900) discusses the dangers of latent and unsuspected otitis media. That even grave disease of the middle ear is easily overlooked in young children, sometimes with fatal results, has been pointed out by many writers. A large proportion of the middle ears examined in infants dead from any asserted cause are the seat of suppuration, unsuspected and revealed by the autopsy. In 1897 Ponfick found that there existed a causal relation between suppuration of the middle ear and severe gastro-enteritis. He suspected that the ear disease was the cause, not the effect of the general malady. Upon curing the suppuration of the middle ear the children rapidly recovered from gastro-enteritis without other treatment. In a hundred cases he made an examination of the middle ears of dead infants under three years of age.

The greatest percentage of ear-disease in any one group in this series, viz.: 35 per cent., was found in infants dying of acute gastro-enteritis, and chronic gastro-enteritis, with or without pneumonia. In eleven cases of uncomplicated pneumonia as revealed by the autopsy, otitis media was absent in only one, a child six months old. In the entire series of 100 cases, in less than 6 per cent. had there been a spontaneous rupture of the membrana tympani nor any other so-called external symptom of ear disease. None of them had been supposed to die of disease connected in any way with aural inflammation unless perhaps the six cases tabulated as otitis media, be excepted. Yet in 100 individuals there were 168 diseased tympana, viz.: 77 ambilateral (154 tympana) and 14 unilateral. In Ponfick's opinion these children had in most instances died of disease originating in what may be termed in a general way a symptomless chronic aural suppuration. That is, there had been no pain in the ear, no discharge, nor any external ear symptoms.

That serious inflammation of the middle ear in a young child exists without much if any pain might be explained by the fact that enough pus may escape from the drum cavity into the nasopharynx, through the short, wide Eustachian tube of a young subject, to relieve tympanic pressure and prevent pain in the ear. This escape of pus into the nasopharynx may also help to explain the infrequency of spontaneous perforation of the membrana in young subjects affected with purulent otitis media.

It has become very clear to many minds that the reason so many young children die is because the real origin of their fatal malady, a middle ear inflammation, is unrecognized and therefore untreated. If an eye is bloodshot anyone can see it; but if a membrana tympani is congested and bulging with pus behind it, it requires an expert to see it.

The writer emphasizes the importance of examinations of the membrana tympani. Instruction in otologic examinations should be given to all medical students, and a practical examination in otology should be required for the degree. Then only will the practitioner recognize the cases where paracentesis of the membrane must be performed to save the patient from the grave complication of ear disease. For it is the young child without discharge from its inflamed middle ear, that is in danger of its life, and not the child with an otorrhœa, for in the latter the presence of disease of the ear is at least recognized, and the ear will get well promptly if not secondarily infected from without.

A NOVELTY IN LAYETTES.

Even so great a writer as George Meredith may be caught tripping when he goes out of his province and deals with matters beyond the masculine ken. Speaking in one of his incomparable novels of an expectant mother, whose nursery was already stocked with six daughters, and who hoped that number seven would be of masculine gender, this foremost novelist goes on to explain that she was so sure of a son that she prepared with her own hands a set of "male baby clothes" for his reception.

Since when was the boy infant clad in a layette differing from that of the "mere girl" baby? Had Meredith, we wonder, a lurking belief that new boys were immediately put into knickerbockers.

The part devoted by him in one of his clever books to the consideration of an infantile layette reads suspiciously as though he were under the impression that trousers and small coats formed the first garments of the day-old boy.—*Trained Nurse.*

PARIS LETTER.

By R. D. TURNER, M.D.

NEW HOSPITALS FOR CHILDREN IN PARIS—NEW METHODS OF
ISOLATION—DR. MOIZARD'S SERVICE AT THE ENFANTS
MALADES—STATISTICS PUBLISHED—RELATIONS
OF RHINO-PHARYNGITIS AND DYSPEPSIA
IN CHILDREN—THE TREATMENT
OF LARYNGEAL STENOSIS
IN MEASLES.

SINCE the days of Trousseau, the great specialist in infantile diseases, the Paris hospitals for children have been noted for the high scientific standing of the physicians who have been appointed to them. In former days clinical instruction was given most profusely, but the lack of knowledge of the real causes of infectious diseases prevented the carrying out of rigorous methods of isolation, and it could be truly said by Archambault that children received at the Hospital of the *Enfant Jésus*, now the *Hôpital des Enfants Malades*, died of the disease which they caught while within its precincts. The death rate was, in fact, enormous. Forty-three per cent of the cases of measles were carried off at one time by bronchial complications. At the *Hôpital des Enfants-Assistés*, or Foundling Hospital, the mortality was something terrific, most of the children dying sooner or later from some intercurrent affection. New methods of isolation have led, however, to great improvements, and it can be safely said that a child is now almost as safe at one of the large hospitals as he is in his own family. There are at present three large hospitals for children in Paris: the *Hôpital des Enfants Assistés* in the rue Deufert-Rochereau, under the direction of Dr. Hutinel, professor at the School of Medicine; the Trousseau Hospital, formerly the *Ste Eugénie Hospital*, in the Faubourg St. Antoine, which is to be torn down shortly, and the *Hôpital des Enfants Malades*, the most important one, which is situated at 149 rue de Sévres. This is by far the pleasantest and most agreeable one to pay a visit to, at least for foreigners, as it is in a part of the city quite near the Exposition. It

is composed of a large number of isolated pavilions. Clinics and lectures are given by Professor Grancher and his aids, Drs. Marfan and Hallé, on Wednesdays and Saturdays. This hospital is furnished with a laboratory which vies with that of the Pasteur Institute. It was not, however, at this hospital, but at the Foundling Hospital, that the reform in the organization of the different services began, thanks to the energy and perseverance of Dr. Sevestre, son-in-law of Archambault, and after him of Hutinel. The enormous mortality observed at this hospital was much reduced, thanks to rigorous isolation of all children coming into the hospital for a lapse of time corresponding to the period of incubation of measles, diphtheria or scarlet fever, as well as to the use of special wards for contagious cases. Dr. Grancher next brought into practice at the Enfants Malades the use of trellis-work screens in iron surrounding the bed of the child, and advocated strongly the employment of blouses, supervising the cleanliness of the nurses, and insisting on the complete disinfection of the plates and implements used for the meals. The precautions were excellent in so far that they prevented the spread of a contagious disease already recognized in a patient just admitted. They did not, however, answer the purpose when children were received suffering from some affection not yet clearly specified, when, for instance, influenza, instead of measles, is diagnosed. In former times, as Dr. Moizard says in a recent article published in the *Bulletin Médical*, these cases were sent into the ordinary wards, and were therefore a source of danger to the other patients. Since 1893 a service for doubtful cases is in existence at the Hôpital Trousseau, but each division contains several beds, a great defect, according to Dr. Moizard, as each case should naturally be isolated. In January of 1896 a service for doubtful cases was established at the Enfants Malades and put into the charge of Dr. Moizard. The results obtained have just been published, and are of special interest, as they show how complete isolation can be obtained in such a service. The "service des douteux," as it is called at the Hôpital des Enfants Malades, is situated in the first pavilion to the left on entering the hospital, and occupies the second floor. The name it bears is that of "Salle Henri Roger." It is 30 meters long, 7 wide and $4\frac{1}{2}$ high, and it was originally made for 40 beds. There are 20 large windows giving plenty of air. This

ward offers a long central passage giving access to 20 small cells, completely surrounded on the sides by glass partitions. One side of the chamber is formed by the wall of the ward, and the three others of wooden frames fitted with glass. The height of the partitions is 2.1 meters, and they are held in place by iron clamps fixed in the floor, which allow for a space of 5 centimeters between the floor and the partition. There is, therefore, free communication of the air between the various parts of the ward, and the last four years' experience tends to show that contagion by air is a factor which is to be neglected. Each box is closed by a glass door. By using glass the head nurse can supervise with ease all that takes place in each box, and as the children can see and talk to each other, they are much gayer and more cheerful. The floor is covered with paraffin, so as to suppress all cracks. The eating utensils are of course boiled after each meal in a solution of carbonate of soda. As for spoons, tumblers and forks, they are reserved to each patient. The floor is never swept, but washed with cloths moistened in a solution of sublimate or oxycyanide of mercury. When a box is vacated by a patient, the bed linen and mattress are sent to be sterilized, and everything in the box, including the partition, is washed down with a 1:20 carbolic acid solution. Whenever anyone steps into a box he must put on one of the blouses which are always left in the box for this special use. Dr. Moizard said in his article on the subject, that the precautions taken insure wellnigh perfect safety; so much so that he would sometimes keep patients after the disease was definitely recognized. In the space of four years and four months 5,016 children have been received into this ward, and there have been only seven cases of contagion observed, six of them being of measles. Dr. Moizard said in connection with this that he thought the contagion took place by the objects used, or by the hands rather than by the air, as he had noticed the cases of contagion did not take place from box to box.

Two or three small hospitals for children have been erected during the last two years, and they will soon be in running order.

Dr. Aviragnet, physician of the hospitals, has observed that in a certain number of children suffering from dyspepsia, the disease is due in part to rhino-pharyngitis. The muco-

purulent secretions of the nose and pharynx are swallowed, and exert an irritating action on the mucous membrane of the stomach. Against rhino-pharyngitis the best treatment, according to Dr. Aviragnet, is the use of injections of olive oil with resorcin into the nasal cavities.

There was held recently at the Society of Pediatrics an interesting discussion on the use of intubation in cases of laryngeal stenosis complicating measles. Dr. Richardière, who is a well-known physician of the hospitals, and Dr. Baltazard, gave in detail the results they had obtained in the treatment of this complication. They were able to report a total of 36 cases of intubation during measles, with 24 cures and 12 deaths. These observations may be classified in the following manner :

First, Laryngeal stenosis due to measles; 14 cases giving 9 cures and 5 deaths.

Second, Laryngeal stenosis due to diphtheria complicating measles; 22 cases with 15 cures and 7 deaths; i.e., mortality, 30%. This percentage is about that of ordinary cases of diphtheria at the Trousseau Hospital: 27 to 29%.

PROGNOSIS IN THE HEART DISEASES OF CHILDREN.

It has impressed me, as it must have impressed every physician who has had the opportunity to see sick children, that when they suffer from disease of the heart the prognosis should generally be more hopeful than when adults suffer with heart disease. This is partly because they are more elastic than adults, whose tissues are stiffer and may almost be said to be brittle, and most of all, perhaps, because children who have not attained their full growth have the opportunity for repair during growth. Injury, or any distortion of the heart that is caused by disease may be effaced as the organ increases in size, for the usual tendency of nature is toward the production of an ordinary type.—Dr. A. V. MEIGS, in *Journal American Medical Association*.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.

KINDERARZT, October, 1900.

1. Contribution to the Study of Contracted Kidneys. By Dr. HERMANN KLAGES (Concluded).—The author concluded from a clinical and pathologic study of the subject that contracted kidney is apt to occur in childhood, but not with great frequency. More frequently an acute nephritis precedes a granular atrophy of the kidney in children. It is easy to consider every case of this kind as primary if there are no points in the history which would make us suspect the presence of an acute renal infection. The author also thinks that the influence of colds in children has been generally underestimated in recent years.

2. Anuria in the Newly-born. By Dr. FRIEDMANN.—Urination is often very scanty during the first few days of life, and it is frequently possible to reassure the anxious parents that nothing pathologic is present. If there is no partial or complete stenosis of the urethra, the anuria may be due to an insufficient amount of food taken by the infant, especially if, as frequently happens, the mother's breast at first contains but very little fluid. In very rare cases there is some new growth or other pathologic process in the kidneys of the child. These cases are, however, so very rare that they may be neglected for practical purposes. In cases in which we are in doubt as to the cause of the anuria we should use the thermometer. If fever is present the anuria is a symptom of the fever. The navel must then be examined, and often we will find fever-producing processes there. Dry treatment with antiseptic powders is the best in such cases and the daily baths should, of course, be suspended.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES,
October 1 and 15, 1900.

1. Investigation Concerning the Prophylaxis of Diphtheria.—The questions submitted by the editor of the *Annales* were as follows:

1. What bacteriologic method do you employ in order to obtain a positive diagnosis of diphtheria?

2. Do you consider the bacillus of pseudodiphtheria a special, distinct species or only an attenuated form of the true diphtheria bacillus?

3. What importance do you attribute to the finding of Klebs-Loeffler bacilli in the mouths of healthy individuals?

4. Upon what do you base the determination of the period of isolation of diphtheritic patients?

5. Do you favor the establishment of special institutions for the reception of convalescent diphtheria patients because the bacilli of diphtheria are found in the throat for a long time after the disappearance of the clinical symptoms?

6. Do you consider necessary the isolation of healthy individuals (in the family or in the school) in whose throats the bacilli of diphtheria are found?

7. What special prophylactic measures do you prefer to adopt during epidemics of diphtheria in families, schools, hospitals, etc.?

The collaborators are not limited to these seven questions, but the editor will be grateful for any other information that may be sent to him on the subject.

The following answers were received since the publication of the last number of the *Annales*:

Prof. NIL. FILATOW, Moscow.—(1) Bacteriologic examination alone does not always give positive results if we do not recur to cultures on serum. (2) The pseudobacillus is a true diphtheria bacillus deprived of its pathogenic powers. (3) In the mouths of healthy individuals bacteria are found which closely resemble the pseudodiphtheria bacillus but are of other origin. (4) I continue to keep my patients isolated for fifteen days after the disappearance of all symptoms. (5) The creation of such establishments would make it possible to isolate the patients until the total disappearance of the bacilli from the mucous membranes. (6) The isolation of healthy individuals who carry diphtheria bacilli in the mouth is practically impossible. (7) I consider isolation to be the best prophylactic measure, but it must be instituted as early as possible; it is also important to examine daily every member of the family or every pupil in the school where a case has occurred.

Dr. TROITZKY, Kieff.—(1) Microscopic examinations and cultures are sufficient to establish a diagnosis, but the physician must proceed with the treatment before the microscopic diagnosis is obtained. Experiments on animals need not be undertaken except in special cases, where a number of lives depend on the result. (2) Non-committal. (3) Micro-organisms of pathogenic character may be present in the mouths of healthy persons without producing any bad effects. (4) Isolation for three or four weeks after the disappearance of the false membranes. (5) Favors all such institutions. (6) Recommends the isolation of all persons in whose mouths virulent diphtheria germs have been found. (7) The best prophylactic measures are isolation and thorough disinfection of all objects that have come into contact with the patient. The author is not fully convinced of the utility of prophylactic inoculation of serum.

Prof. MARTINEZ VARGAS, Barcelona.—(1) If there is no correspondence between the bacterial report and the clinical data he has recourse to inoculation into animals. (2) Believes that the short pseudo-bacilli are a special variety of Klebs-Loeffler bacilli. He has not seen them alone nor

in predominating numbers in cases of true diphtheria. (3) The finding of bacilli in the mouths of healthy persons has the same significance as the latent stage of any infection. These bacilli are dangerous for those who carry them as well as for children who come into contact with them. (4) At present when serum is used one can materially shorten the period of isolation. In ordinary cases he keeps the patients isolated for six days after the disappearance of local symptoms. In intense cases this period is prolonged for twenty days, and if cardiac complications are feared, for from thirty to forty days. (5) In a hospital or asylum he considers a ward for diphtheria convalescents a necessity. Such establishments would be useless for children in private practice. (6) It is difficult to subject healthy persons to a bacteriologic examination, but if he should find bacilli in the the throat of such a person he would certainly insist on isolation. (7) He has never been a partisan of preventive injections of serum. This measure appears to be practical only in hospitals and asylums where a number of cases are present. Isolation and disinfection of persons, objects, and rooms are the measures of prophylaxis which he insists upon.

2. Thirteenth International Medical Congress—Section on Surgical Affections of Children—Proceedings and Reports.—The abstracts of these papers have already appeared in previous issues of PEDIATRICS under the heading *Revue Mensuelle des Maladies de l'Enfance*, August-September, 1900.

3. The Importance of Medical Service in Public Nurseries. By Dr. CHARLES LEROUX. This article is a plea for the maintenance of a regular medical supervision of asylums and nurseries for infants. The theory of the managers of some of these institutions has been heretofore that in such an establishment there are no sick children, or there are supposed to be none. The facts, however, are very strongly opposed to this theory. In an assemblage of fifty children it is rare to find that not one is in the stage of incubation of an infectious disease. The author also pleads for the establishment of smaller asylums for infants, and says that it is the large ones that are in danger. He also advocates a system of rooms containing from six to ten beds. There is no necessity to make all the children in the crèche congregated in the play hall. It is also better to have one attendant for each room and to have no other attendants come into the apartment. A thorough disinfection should be instituted twice a year if there are no epidemics, and every time a contagious case occurs.

4. Thirteenth International Medical Congress—Section on Diseases of Children (Proceedings continued). See under *Revue Mensuelle des Maladies de l'Enfance* for August and September, 1900.

5. Concerning the Prophylaxis of Diphtheria.—The following two answers to the editor's questions, forming a part of the collective investigation on the subject inaugurated by the *Annales*, have been received too late for inclusion in the last issue: (For questions see page 390, Nov. 15, 1900).

(To be continued.)

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ORIGINAL ARTICLES

DIPHTHERIA AND ITS TREATMENT.

By CHARLES C. GIDNEY, M.D.
Granger, Texas.

DIPHTHERIA may be defined as an acute specific, constitutional disease, both epidemic and contagious, due to the bacillus of Klebs and Loeffler. It is usually characterized by the formation of a false membrane upon certain mucous membranes, especially those of the tonsils, pharynx, nose and larynx and by glandular enlargements; attended with more or less fever, prostration, and frequently albuminuria; in many instances being complicated by pneumonia, nephritis, cardiac failure and sometimes followed by localized or general paralysis.

Causes: A specific germ, the Klebs-Loeffler bacillus, according to all recent researches, is the true cause of diphtheria.

Diphtheria is preeminently a disease of childhood and prevails epidemically, endemically and sporadically. The disease is often introduced into remote districts in some inexplicable manner, and before its nature is recognized a large number of persons have been exposed and an epidemic results.

It does not arise *de novo*. Every case has its origin in a previous case either directly or remotely.

Direct infection is the cause in the great majority of cases. The bacilli are discharged in great numbers in the

saliva, in the mucus from the mouth and nose, and in pieces of membrane which are coughed up. All conditions of bad hygiene increase its virulence and diffusion, although the chief cause of its spread is contagion. Transmission is possible as long as virulent bacilli remain in the throat; and these are frequently found two weeks after the membrane has disappeared and the patient is regarded as entirely recovered.

Indirect infection is not uncommon and may occur from the bed or clothing of the patient, from the carpet, furniture, wall paper or hanging of the room, from toys, picture-books, dishes, cups, spoons and other articles which come in contact with the patient.

Diphtheria may be carried by a third person, but rarely, except by one who has been in close contact with the patient. Local catarrhal and adenoid conditions of nose and throat largely influence the occurrence of diphtheria.

The two sexes are about equally liable to the disease, and children under ten years of age are more easily affected, the greatest susceptibility being between the second and fifth years. According to Holt the period of incubation is from two to five days, and while the disease is seen throughout the year, it is rather more frequent from October to April.

Since our time is somewhat limited and the pathology, morbid anatomy, etc., are fully described in the late text books, we will pass these by and in a brief manner give some of the most important symptoms.

Symptoms: Following the law of contagious diseases, the symptoms vary in intensity in different cases, the prominent symptoms being often disproportionate to the gravity of the attack. The invasion may be mild with rigors, succeeded by moderate fever, headache, languor, loss of appetite, stiffness of the neck, tenderness about the angles of the jaw, or slight soreness of the throat. In other cases the invasion is more abrupt and severe; vomiting, headache, chilliness, followed by great febrile reaction (103° to 105° F.), aching of limbs, loss of strength, painful deglutition may appear, and upon inspection the fauces are seen to be red and swollen and more or less covered with a film of diphtheritic exudation, giving a glazed appearance, soon followed by the dirty-white membrane, which

has gradually spread from the tonsils to the pharynx, uvula and into the posterior nares.

It is by means of this spreading that we can often differentiate it from follicular tonsillitis. The constitutional symptoms usually increase steadily with the extension of the membrane. The appetite is poor or lost, tongue coated, the bowels regular or slightly relaxed. The pulse becomes rapid, weak and compressible, sometimes irregular. The course of the temperature bears no constant relation to the severity of the other symptoms. Its usual range is from 101° to 103° , but in some of the worst cases it may never go above 101° F.

The urine is high-colored and contains albumin, but the amount secreted is not noticeably diminished, and dropsy is rare.

When extension to the nasal cavities occurs, we have a sanious, offensive discharge from the nose. If the larynx becomes involved, we have a diphtheritic laryngitis, indicated by hoarseness or complete loss of voice, croupy cough, and obstructive breathing, which often becomes urgent, the breathing being noisy and stridulous.

Cases sometimes occur of laryngeal diphtheria without any visible membrane, and these are sometimes very hard to distinguish from catarrhal laryngitis.

Diagnosis: The diagnosis of diphtheria rests upon two kinds of evidence—clinical and bacteriological. For early diagnosis much more reliance is to be placed upon the local appearances than upon the general symptoms. The characteristic membrane of diphtheria appears, in the great majority of cases, first upon the tonsils usually as a gray film, which gradually becomes more dense and white, and often has the look of being plastered on. The color of older membrane is gray, greenish, yellow or brown. Beginning as a small patch, it soon spreads so as to cover the tonsils, frequently affecting one tonsil twenty-four or thirty-six hours before the other, and occasionally is confined to one side. Removal of the membrane usually requires some force, leaving bleeding points, which, as a rule, are re-covered by membrane within twenty-four hours.

If the membrane extends from the tonsils to the faucial pillars and uvula, it is almost surely true diphtheria; so also

when it extends to the lateral walls of the pharynx. Doubtful patches on the tonsils or fauces, followed by symptoms of croup, may be considered as diphtheria with almost absolute certainty. In pure diphtheria there is a notable absence of edema of the faucial pillars and uvula, so common in throat inflammation due to cocci. In fact whenever there are seen in the throat evidences of a high degree of inflammation, it points to either mixed infection or false diphtheria. The diagnosis is now made certain by making a culture from the deposit, and if the bacillus is present, the characteristic colonies can be seen in the course of twenty-four hours under the microscope.

Prognosis: There is no disease in which it is more difficult to foretell the outcome, and none in the course of which unexpected dangers so often arise. Jacobi well says "The physician will often be deceived, and more frequently in mild cases than in severe ones." The prognosis is always grave, but more so in children than in adults. The average mortality is twelve per cent.

Treatment: In the year 1891 a new era in the treatment of diphtheria was introduced by a series of investigations published by Prof. Behring, but it was not until 1894, when the acquisition of serum from large animals, particularly the horse, premitted the extension of the methods discovered in the pathological laboratory to the treatment of human beings that general interest was aroused. The treatment rapidly spread, and by the commencement of 1895 was on its trial throughout the civilized world. Five years having now elapsed antitoxin for the treatment of diphtheria has passed the experimental stage and its advantages in the treatment of this disease are recognised throughout all civilized lands.

Being assured that even today there are many men of undoubted learning and reputation in the profession who, from insufficient experience or from a series of unfortunate cases do not believe in or are doubting Thomases as to the efficacy of antitoxin in the treatment of diphtheria, I have chosen this subject with the hope that I might encourage some to renewed efforts in its use and persuade others to give a fair trial to this now well-proven remedy, for in our associations with men in

the profession, we are convinced that its use is not yet universal. The records of every children's hospital will show that every now and then children are admitted into the hospital dying from diphtheria, to whom an injection of serum has never been administered, although they have been under medical treatment.

The following tables showing the percentage of mortality from diphtheria before and after the introduction of antitoxin are of interest, when we remember that the hospital death rate in the United States and Europe prior to the serum treatment was 46 per cent. :

	PER CENT.
In Boston, for 16 years, prior to 1895	30.7
In Boston, for 4 years, 1895 to 1899.....	11.27
In Denver, from 1889 to 1895.....	36.4
In Denver, from 1895 to 1899.....	11.56
In Berlin, from 1890 to 1895.....	35.34
In Berlin, from 1894 to 1897.....	18.08
In Brisbane, from 1889 to 1895.....	43.2
In Brisbane, from July, 1895, to Aug., 1899	12.6
In Boston City Hospital, 1889 to 1895.....	40.50

Since the opening of the South Department of the Boston City Hospital and the use of antitoxin, the percentage of mortality has been as follows: 4196 cases treated from September, 1895, to May, 1898, with death rate, 13.7 per cent.; 1672 cases treated from February 1, 1899, to February 1, 1900. Mortality, 10.7 per cent.

Dr. J. H. McCOLLUM, resident physician of that institution, states that the low mortality of the past year is due to the extremely large doses of antitoxin in the very severe cases.

Dr. BRIGGS, of the New-York Health Department, presents the following results: In Paris, before the antitoxin period, the monthly mortality from diphtheria was from 108 to 180; after the period it fell to 45 or 56. In Berlin, before the period, the deaths were 114 to 117, which fell to 27 or 54. In New York, before the period, it was 236 to 317; after, 168 to 207.

The most surprising and convincing evidence comes from Chicago, where 2,468 cases were treated, with a mortality of 6.4 per cent.; and of 1,112 cases injected during the first three days, but 2.5 per cent. died.

We should in the first place inject our remedy as early as possible, after making the diagnosis, and frequently in doubtful cases before a diagnosis is made. The inflammatory processes have a tendency to spread locally, especially into the air passages. Apart from the mechanical obstruction of the breathing, all the danger of the disease results from the absorption of diphtheria toxin from the local focus of disease. The antitoxin should be injected in proportion to toxin matter absorbed.

In mild cases, seen early, an ordinary dose of from 600 to 1,000 units injected between the scapulæ or into the cellular tissue of the abdomen or thigh is quite sufficient. However, it is quite different with cases of longer duration presenting extensive membrane, extending it may be into the nose or larynx, or in cases showing symptoms of toxemia. In these cases the toxin is already fixed in the tissues, and death from implication of the central nervous system, heart, or kidneys will very likely occur.

In really bad cases of this description I would administer from 4,000 to 6,000 units at once, and perhaps inject an additional 2,000 or 3,000 units within the next twenty-four or forty-eight hours. Obviously it requires larger doses to remove a lesion than to prevent an infection or intoxication, and it is of greatest importance not to use too little of the antidote for we are more apt to regret that we have used too little than to feel that we have erred in using too much.

Dr. A. JEFFERIS TURNER says that in the Brisbane Children's Hospital for severe cases they often use 6,000, 8,000 and even 12,000 units. Often twenty-four or forty-eight hours elapse before improvement begins. Every medical practitioner ought to keep a supply of fresh antitoxin and a suitable syringe at hand. The liquid preparation is the easiest for use and may be kept for six months or more without losing its efficiency. With the exception of cleansing sprays of five per cent. boric acid solution, listerine and water, or salt and water, with a fountain syringe, local applications are in nine cases out of ten unnecessary; and unnecessary treatment is bad treatment.

Internal medication has also been abandoned as a routine measure. When the pulse is showing signs of failure, digitalis, strychnia and alcohol may be of some service. In

cases of laryngeal diphtheria it is often necessary to resort to intubation in conjunction with the serum treatment. These cases are always serious and the mortality used to be very high. It has now been reduced more than two-thirds.

The unfavorable effects upon the heart, the kidneys and the blood attributed to antitoxin are to my mind yet unproved. In a disease like diphtheria where the heart and kidneys are so often and so seriously affected, and in many cases very suddenly, it is impossible to say, even when they follow the injection of serum, that they are not due to the original disease, as we were accustomed to do before the introduction of antitoxin. To sum up the whole matter the treatment consists in the administration of antitoxin early and in sufficient dose. A trustworthy preparation of known antitoxin strength should be employed.

There need be little fear in administering an overdose. The main objection to giving an unnecessarily large dose is its cost. To give too little for this reason is poor economy. The saving in the number of doctors' visits, not to mention funeral expenses, much more than covers the cost of the serum. We may say that if patients and medical men did their duty, the former in calling assistance early, the latter in applying the remedy early and in sufficient doses, the death rate from diphtheria might be reduced to a small fraction of what it is at present, notwithstanding its great reduction in the past four or five years. Indeed, with the necessary qualifications, we may say that very few children ought to die from diphtheria.

NO BRANDY DROPS FOR CHILDREN.

A crusade has been started in North Adams by the Massachusetts State Board of Health against the sale of brandy drops to children under 15 years of age. The candy secured contained over one per cent. of alcohol. The five dealers pleaded guilty and the cases were placed on file on payment of costs. Joseph Rudnick was fined \$10 for selling adulterated coffee.—*Phila. Med. Jour.*

MIXED FEEDING OF INFANTS.

By JOHN ZAHORSKY, M.D.,

Clinical Lecturer on Diseases of Children, Medical Department,
Washington University, St. Louis, Mo.

IT is well known that the character of human milk undergoes variations during the normal period of lactation. In regard to composition, a progressive diminution of the percentage of proteids and mineral matter and an increase in the carbohydrates is characteristic of normal lactation. The quantity steadily increases. In addition, daily, weekly and monthly variations occur, depending on the food supply as well as the mental and physical conditions of the mother; *a priori*, then, a variation in the diet of infants is normal.

Furthermore experience has shown that in addition to mother's milk infants at an early age take with benefit some additional food. It is exceedingly common for mothers to give their nurslings a light pap, some milk, meat broths, toast, crackers, etc. Only when this additional dietary list is pushed to an excess are the results pernicious.

Ordinarily after the fifth or sixth month nothing but benefit accrues from a judicious use of auxiliaries to the breast-milk.

It seems to me therefore that a more extensive study of mixed feeding might lead to some practical results; and indications and rules for its use might be formulated which would materially aid in pediatric practice.

In the last few years, both in hospital and private practice, I have given this subject some thought and have employed this method of feeding in a variety of cases. This experience forms the data for the conclusions expressed in this paper.

The subject naturally divides itself into two classes:

Artificial feeding as an adjuvant to nursing.

Human milk as an adjuvant to artificial foods.

ARTIFICIAL FEEDING AS AN AID TO NURSING.

The indications for the use of artificial food as an auxiliary to human milk are several, depending on abnormal variations in the quantity and quality of the milk. Our text-books usually give only two—a deficiency of the quantity of milk

secreted and a diminution of the solid milk constituents. But other conditions exist, and the principal ones I shall enumerate.

1. The Mother's Milk is Deficient in Quantity.

This is exceedingly common. Three-fourths of the mothers, at least among the wealthier classes, do not have a sufficient amount of milk for their offspring. The gradual increase which should take place as the period of lactation advances, fails, and after a few weeks the mother cannot satisfy the infant. The bottle must be given in addition, at first possibly only once daily, then two or three times. But whatever means we use to supply the deficiency, the mother should continue to nurse regularly. Otherwise the milk secretion steadily diminishes. The act of nursing regularly is the most powerful galactagogue that we possess.

2. The Human Milk is Deficient in Solid Constituents.

When an infant at five or six months becomes anemic, does not gain in weight, and shows signs of rickets, the milk should be examined. Occasionally it is found that the percentage of proteids is very low, sometimes as low as 5 per cent. Thus in the case of a little colored baby 5 months old, who showed evidence of severe anemia and rickets, an examination of the mother's milk revealed a proteid percentage of 7 per cent. The addition of cow's milk and meat juice to his diet soon had a gratifying effect on his nutrition.

3. The Human Milk Contains Proteids in Excessive Amounts Causing Colic and Indigestion.

In another place (*St. Louis Com. Med.*, July, 1900) I have discussed the relationship of high proteids and colic in infants. Suffice it to say here that colic, as found in the breast-fed infant, is an exceedingly common condition, and is usually very troublesome. The cause must usually be assigned to excessive proteids in the milk. These proteids, like those of the bean, very readily undergo gaseous decomposition, and the gas causes the violent peristalsis that causes the infant pain.

I have found that some food containing dextrinized gruel, condensed milk, or some food which contains dextrin, sugar and starch, such as Nestlé's food, given immediately before

nursing has a happy effect. The artificial food dilutes the breast-milk and the carbohydrates inhibit the decomposition of the proteids. In all cases of severe colic this method should be tried, and it seems the most perfect prophylactic against colic that is known.

4. The Human Milk Causes Diarrhea in the Infant.

It is well known that colostrum has a laxative effect. Occasionally diarrhea supervenes soon after birth and persists for a long time. In many cases, no doubt, some gastroenteric infection has taken place, but in others the milk possesses decided laxative qualities. In either case a solution of dextrinized gruel administered before nursing will act very well.

5. The Human Milk Causes Constipation in the Infant.

This intractible condition is exceedingly common. In many cases a deficiency in fat exists, but in others the milk is perfectly normal, and we must ascribe the condition to excessive absorption of fat and to a congenital weakness of the muscular coat of the colon. Whatever the cause, in a great majority of cases additional feeding acts very happily. Usually a milk mixture containing about 4 per cent. of fat, 1 per cent. of proteids, and 7 per cent. of sugar, given two or three times a day is all that is necessary. I have found an increase of proteids with egg albumen to be very laxative. Ordinarily egg water (the white of one egg to 10 ounces of water sweetened with cane-sugar) acts as a laxative to young infants and will frequently overcome obstinate constipation. A few ounces of this water should be given two or three times daily.

Older infants (eight to twelve months) seem to digest it perfectly, and the laxative effect is not so marked. Why egg albumin is laxative to young infants is unknown. Possibly the ovomucoid is the intestinal stimulant.

Frequently oat-meal gruel, given in appropriate feedings two or three times daily, relieves constipation. Still greater merit is possessed by the malted mixture, such as malted milk, malted cream, etc. Maltose is very laxative. One or the other of these foods will usually succeed in overcoming the constipation. In obstinate cases the administration of pure butter, as recently recommended, deserves trial.

6. The Human Milk is Toxic.

Drs. Saunders and Fish (*Med. Rev.*, 1899) have reported several instances in which it was discovered that the human milk was toxic. Nevertheless even in these cases experiments should be made if by artificial feeding the irritating qualities of the mother's milk may not be altered.

HUMAN MILK AS AN AID TO ARTIFICIAL FEEDING.

Nothing need be said concerning the value of wet-nursing; it is undoubted. But here attention will be called to the fact that human milk can be furnished temporarily in small quantities by many mothers for other babies than their own. Let it be decided that a small quantity of human milk is desirable. In a city at least some relative or neighbor probably nurses a healthy infant and has more than sufficient breast-milk. For the sake of a needy baby, or for a small financial consideration she will rarely refuse to furnish a few ounces of milk daily. A mother who is advanced for some months in the period of lactation is to be preferred, since her milk is less liable to prove too rich in solid constituents.

The milk is obtained from her breast by manipulation, that is, by "milking." One-half to one ounce may thus be readily procured. To obtain it the breast-pump or cupping-glass may also be employed. This milk is put in a clean vessel and added to the artificial food in the baby's bottle.

The properties of this milk are both nutritive and therapeutic. Human milk is a powerful stimulant to the digestive and absorptive functions of the gastroenteric tract. It seems also to give strength and tonicity to the vascular system; it supplies antitoxic and bactericidal properties to the blood of the infant which struggles with some infectious process. Having these therapeutic principles in mind one can readily deduce certain indications:

1. Marasmus.

The pathology of this disease is still in dispute, although the researches of Fenwick and Baginsky seem to show a degeneration of the epithelium lining the alimentary tract. At best it takes time to effect a cure. The proper feeding, as laid down by Rotch and others, is a food having the proteids and

fats well diluted. But in all cases time and care is the important element in treatment. I have found in a few cases that the addition of mother's milk, even in small quantities, to the food very quickly changes the clinical picture to one of improvement. Or the baby may be given mother's milk exclusively for a few days and the artificial food gradually supplied. Or the baby may take the mother's milk and artificial food alternately. The method of mixing these foods may be changed according to indications and depending on the amount obtainable. Personally I prefer to mix the human milk with the artificial food in the bottle, or still better if the baby is permitted to take the breast, let it nurse a little immediately after the ingestion of the food.

The following is a brief history of such a case:

J. E., aged 2 months, an inmate of the Bethesda Foundling Home, has progressively emaciated for one month. She now weighs about six pounds. The food administered has been cow's milk modified to the formula—proteids, 1; sugar, 7; fat, 2.

The stools had been rather frequent, showing undigested masses. The baby was very thin and pale, yellowish in color. The skin was wrinkled, and the bones prominent; the fontanelle was depressed, the cry very feeble, and the movements slow; no fever existed.

The infant was placed on human milk, which was obtained by manipulation from the breast of a young mother. The infant received 2 to 3 ounces every three hours for two days; it was then fed on modified cow's milk and human milk alternately for three days. Afterwards the baby received the human milk once or twice daily. In one week she gained 10 ounces. Although more human milk was not obtainable, the baby did very well and is now healthy.

2. Gastroenteric Infection.

We do not dread the infection of the gastroenteric contents so much as the malnutrition following. Very frequently after successfully ridding the infected alimentary tract of the offending microorganisms, the infant fails to thrive. The injury done to the intestinal lining is not repaired, and nutrition progressively fails. Or a severe form of cholera infantum is carried through the storm. The baby seems much better, but

yet no food can be had to agree. Fever may develop and the patient succumbs to septicemia. In these conditions human milk, even in small doses, has a powerful therapeutic effect. It stimulates the diseased epithelial cells so that they again imbibe nourishment; it strengthens the body to resist the onslaught of infection.

Given a case of acute gastroenteric infection of great severity, the ordinary measures must be instituted. The alimentary tract should be thoroughly evacuated, and water administered in large quantities. For two or three days rice water or barley water may be safely given, but then the question of additional food arises. The answer is, add a little human milk to the rice water. Gradually increase the amount of human milk, carefully noting its effect, and if symptoms improve sterile cow's milk may be gradually substituted for the human milk. If egg water is used during the diarrhea the human milk can be added to this.

The following brief history illustrates this:

Baby R., aged 3 months, was put on condensed milk since it was one month old; a few days after some symptoms of indigestion appeared. To-day, July 20, 1900, the infant has had about twenty watery passages in a few hours; the temperature is 102° F.; the pulse rapid; skin very dry and pale and somewhat wrinkled; the eyes appear sunken and staring—in short, a typical picture of cholera infantum.

The infant was immediately taken from the condensed milk and placed on ice water. The colon was irrigated, and plenty of water administered. Small doses of calomel were prescribed as soon as the violent peristalsis was somewhat diminished.

The next day the patient seemed better; the rice water was continued for another day, then whey was gradually added to the rice water. But after some days no improvement in the nutrition was noticed and the stools were still frequent. The mother was directed to add some mother's milk to the whey. A neighbor with a ten-months baby furnished about 3 ounces and a relative of one patient furnished 3 or 4 ounces daily; this was obtained in ½-ounce quantities and added to the whey in the bottle. The nutrition of the infant improved rapidly, and in about ten days it was placed on modified cow's milk.

3. Rickets with Tetany.

The common cases of rickets can be successfully treated by artificial foods and some medicament; but those forms of rickets which are accompanied by great irritability of the nervous system, as expressed by laryngospasm, tetany, or eclampsia, need some other food. Here again a temporary change to human milk, or the addition of human milk to the artificial food greatly enhances the probability of cure. Having given an antispasmodic, preferably chloral, a nursing mother should be sought who will furnish at least a few ounces of milk daily. Of course if a wet nurse can be obtained, so much the better, but wet nurses cannot always be found.

The following exemplifies this:

G., a girl, weight at birth $8\frac{1}{4}$ pounds. She obtained the breast until three weeks old, then was put on Walker-Gordon laboratory milk; she was an inmate of the Bethesda Foundling Home; she lost flesh, and at three months weighed about as much as at birth; she had thrush and digestive disturbances; she cried very much; when about four months old she was seized with convulsive and tetanoid movements. At times some difficulty in breathing and an inspiratory stridor were observed; infant appeared pale, weak, and emaciated; the bones were very soft; there was much sweating about the head, and other signs of beginning rickets existed.

A dose of castor oil was given; then 3 or 4 ounces of human milk was given every three or four hours in a bottle; the tetanoid seizures disappeared in two days, and the child began to thrive. The same food that was previously given was used again alternately with the human milk; in ten days the infant had gained about 10 ounces. After two weeks the human milk was gradually discontinued, but the infant continued to thrive.

4. Scurvy.

In this disease also, if symptoms are urgent, a little mother's milk might be of incalculable benefit. In addition to fruit juices and fresh cow's milk or white of egg, a little human milk might be obtained and added to the artificial food; although I have not as yet had the opportunity to test this method, it offers theoretical advantages.

These are the conditions in which a little human milk may have a powerful therapeutic effect. But any disease which

leaves the nutritive powers in a feeble state might stand for an indication for its use.

While I have added nothing new to the known qualities of human milk, I trust that in place of a wet nurse my suggestion to employ a little human milk may be of some value to the practitioner, who finds difficulty in adjusting artificial foods to the diseases mentioned.

1460 South Grand Avenue.

PALATABLE PRESCRIBING IN CHILDREN.

Palatable prescribing is essential to success in the management of sick children. The physician who is not a medicinal atheist, but believes that drugs possess the power of curing or relieving disease, is bound to see that his little patient is able to take and retain the medicines he prescribes. For, otherwise, the anguish and distress inflicted upon the unfortunate child and mother during the administration of a nauseous and disgusting medicine makes the cure by far worse than the disease.

Who has not witnessed actual injury done to the child during the forcible administration of medicine by its own mother, who, anxious to alleviate suffering and very confident in the marvelous results of the all-healing medicine prescribed by her all-powerful physician, has transgressed the borderline of sanity. Indeed, on a few occasions, the writer found children with pneumonia in a state nigh to suffocation from the effects of prolonged and firm compression of the nostrils; and many a child bleeds from the gums and lips and loses a tooth or two from the attempt of the *kind* mother to force down into the child's throat a teaspoonful of miserable stuff—intended, perhaps, as a mere *placebo*.

The mother is to be pardoned, but not the physician, for with the modern pharmaceutical adjuvants and some consideration for the feelings of the sick he is enabled to render the taking and giving of medicine a pleasure rather than a pain, an act of benevolence rather than an act of cruelty.—Dr. SHEFFIELD, *The Post-Graduate*.

BULLET IN THE FOOT LOCATED BY THE X-RAY.
OPERATION.—SUBLUXATION OF THE KNEE.*

By JAMES M. HOLLOWAY, A.M., M.D.,

Formerly Professor of Surgery and Clinical Surgery in the Kentucky
School of Medicine, etc., Louisville, Ky.

GENTLEMEN: I call your attention to this skiagraph taken by Dr. J. T. Dunn. It is of a foot without the shoe being removed. Not only does it show the metal fastenings for the shoestrings but also the oval-shaped piece of iron or steel in the bottom of the shoe, the nails in the heel, and of more importance than all, it shows the location of a pistol bullet in the sole of the foot. The bones of the foot are also outlined as plainly as if they were uncovered by dissection. The dark place represents the cushion of the foot, the immense thickness of the integument, the cuticle and muscular layers, and the cicatricial tissue, and in this is imbedded the bullet.

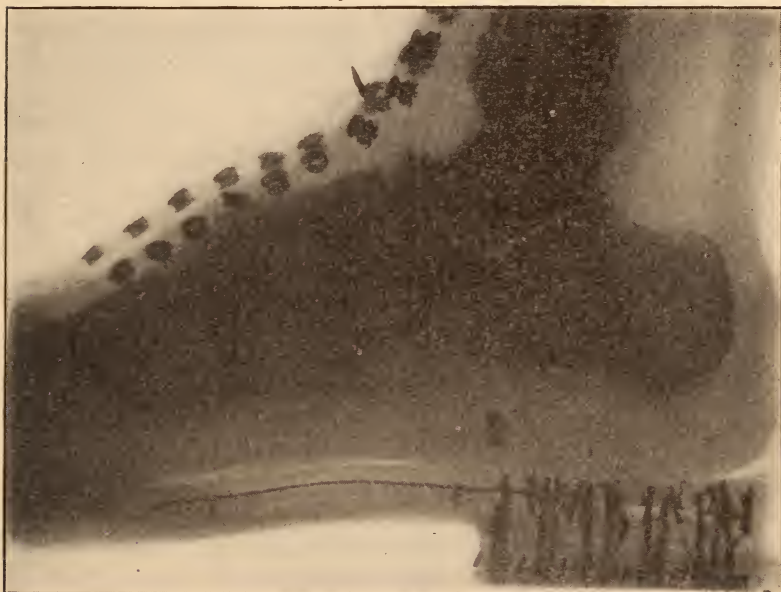
The patient is now before you. He is a colored boy aged 19 years. Seven years ago he was shot by a 32-caliber bullet; he was sitting at the time with his leg resting on a chair and the bullet entered from behind, just back of the external malleolus. This happened when he was twelve years old.

Now, a very interesting point is that this boy has only suffered within the last three weeks from the effects of this bullet. He says that in locomotion it hurts him; that he has severe pain in the sole of his foot. What does this mean? It means that this light bullet which entered above the ankle has passed down into the sole of the foot. Although unassisted it has nevertheless traveled. You will find that this happens in the history of bullets where there is considerable motion of the parts, or where the weight of the ball causes it to travel by force of gravitation.

A gunshot wound making an orifice of entrance—a contused and lacerated wound, but with inverted edges, with no orifice of exit, is *prima facie* evidence that the bullet has

* Clinical lecture delivered at the Hospital of the Kentucky School of Medicine.

lodged and with it, perhaps, has been carried a patch of sock, trousers, or some other article of clothing. A careful examination of the clothing will reveal this unless you find the patch outside. I cannot go into all the points, but simply make these suggestions: If you simply see a slit in the clothing where the ball has entered there is strong presumptive evidence that there has been no foreign body carried in with the ball. If the ball has not struck any very resistant substance in its transit through the parts wounded it will be almost in its



original shape, but if it has struck a dense piece of fascia or bone it may be made, by its mashing upon this hard substance, of an irregular shape; it may be converted into almost any shape, sometimes a jagged, irregular mass of lead. The less change there is in a ball in its lodgment into the tissues, whether in the hard or soft parts, the less the likelihood of there being an amount of irritation which will prevent encystment of the bullet. But often when the bullet is encysted by a sufficient amount of irritation to cause a hyperemia around and about it, you have that condition of cicatricial tissue, even in the dense structure, which wraps itself around the bullet and fixes it under ordinary circumstances; but if there is considerable

movement of the part or if weight is present, that bullet has a tendency to change its location, as in this case, where in seven years it has moved from its original place of lodgment down into the cushion of the sole of the foot and is giving the patient pain on locomotion.

The history of one of these bullets is very interesting: I remember the case of a man from Texas who had a bullet lodged in his lung; that bullet, as well as could be ascertained from the size of the wound of entrance, was one of those large minie balls, which weigh from 8 to 10 drams. I had an opportunity for months of listening with my ear following the track of this bullet as it made its way from the upper lobe of the lung down to almost the lowest portion and up to the time my examinations of the man ceased it had only caused slight irritation; he had no hemorrhages, no great elevation of temperature, no quickening of the pulse, no progressive emaciation. This was after three or four months, but the final history of the case showed that this constant irritation set up such changes in the lung that the man eventually died of phthisis, probably of a tubercular nature.

You will usually find bullets lodged between muscles, in the cellular planes and not in the substance of the muscle itself, and their position may be changed from time to time, as already explained; the bullet may change its position without changing the material thrown out around it.

Here is a bullet which has traveled but a short distance in seven years in a very active part, a part which is absolutely essential in locomotion, and at the end of seven years the presence of it, while it is pressed upon at, every step the patient takes, gives rise to pain. There is no sign of sepsis, and nothing more than a hyperemia, which might follow immediately after receipt of the injury.

Now, in this case I propose to cut down upon and remove the bullet as it is in this boy's way and diminishes his ability to earn a living. If it was situated a little closer to either edge of the foot I would make an incision on the side, but as it is near the center of the foot an incision from the side would have to be deeper than is proper. Why I would make my incision by preference from the side would be to avoid a scar on the sole of the foot, but on account of the location of the ball an incision in the center of the sole will be required for its

extraction. Since the skiagraph has been taken and the ball located, by careful manipulation it can be felt in the tissues.

His foot has already been scrubbed with soap and water, in the ward, but the patient afterwards put on his sock and shoe, so we will again carefully scrub the parts in order to have the field of operation clean and in that way get as perfect and prompt repair as possible. We do not need an Esmarch bandage in this case, as the operation will be done quickly, but we will elevate the foot on a pillow as a matter of precaution against hemorrhage.

You observe that I make my incision in the direction with the long axis of the foot. I have now gotten down to what appears to be a small sac containing serum, and I find the bullet in this little sac. It is slippery, and its removal difficult; it slips away from the forceps; I find some difficulty in grasping it. In removing bullets from the cushion of the foot you will always encounter more or less difficulty—the bullet will slip away from you until you work around and get behind it with an instrument. I have now succeeded in removing the missile, and you will observe that it has not changed a particle by its long residence in the tissues; it evidently struck nothing hard or dense at the time the shot was fired. The bullet is small, being only 22-caliber.

We will bring the edges of the wound together with one or two sutures, cover it with iodoform gauze and apply the ordinary dressing. The wound will be re-dressed at the end of two or three days, and the patient will be kept in the hospital for a week. No trouble should result after this apparently simple operation, but we will keep the man in a ward where he can be closely watched until the process of repair is completed.

A very interesting series of investigations were made by me during the late war in my rounds of the various hospitals from day to day. I made drawings of the wounds of entrance and exit in hundreds of cases at different stages, and found that invariably I had evidences of greater destruction at the orifice of entrance than at the orifice of exit; the orifice of entrance was usually smaller than that of exit; I found in recent wounds at the orifice of entrance the tissues were greatly contused and lacerated; at the orifice of exit in most recent wounds there was laceration without contusion and the

tissues were less bloody; I found there was marked loss of structure and a greater amount of scarring at the wound of entrance than obtained at the orifice of exit, the shape of these orifices varying with the size and condition of the projectile. I made such a great number of observations that I was able to tell afterwards, and can do so now, where there is an orifice of entrance and an orifice of exit, almost invariably where the ball entered and where it came out, even if the wound was inflicted twenty years before. So it is a matter of great interest, and I would suggest in all cases of gunshot wounds you bear in mind the points I have made, as it may often be a medico-legal question for you to decide from which direction the bullet came.

In the case we have just operated upon the bullet was lying loosely in the little sac containing serum and the bullet had traveled at least $4\frac{1}{2}$ inches since it was deposited in the tissues seven years ago.

Case 2.—This patient is 3 years old. Father died of consumption of the lungs one year ago. Two months ago the baby fell from the top to the bottom of a high staircase striking on his knees and other portions of the body. He was considerably shaken up by the fall but apparently not much hurt. The mother at that time was sick in bed and for that reason the child did not have proper examination and care; nothing wrong was noticed. Three days later he complained of pain in the right knee, which was on examination found to be quite tense and painful. Liniments and other soothing applications were applied and the inflammation subsided, but the knee was stiff and clubbed, that is, out of shape. The motion at that time was limited and it is limited now. There is some clubbing of the joint and slight subluxation apparently and the knee is almost flexed at right angles. He complains of pain in the knee, especially during the day; sleeps fairly well at night. General health good.

We have here evidently a condition of partial subluxation; we find there is a sulcus where one bone overlaps the other. There is a limited range of motion with the leg in flexion. We can easily take the unaffected leg and by flexing it make the heel strike the body; on the affected side this cannot be done. Whenever you see a child guarding one foot or the

other you may be sure there is something the matter with either the hip, or the knee, or the ankle.

You will find my questioning of this mother was a very important feature, and you should do likewise in all such cases that come under your observation. I said, my good woman, did the doctor try to straighten that leg? She said that he did not. If it had been flexed and if the physician had tried to forcibly straighten it under chloroform, using the length of the leg for leverage, as is usually done, without due regard for the relation of the bones, he probably would have done what unfortunately has been done by many surgeons in trying to straighten legs flexed in this way. The tendency is, where the leg is flexed this much, for the tibia to be lying upon the posterior portion of the condyles, and in an attempt to straighten the leg, unless great care is exercised, you will cause a detachment of the tibia backwards from the lower end of the femur, and then you will have what is called a complete luxation. In Park's and other surgeries you will see it is called dislocation of the upper end of the tibia just behind the condyles. You must be extremely careful when you attempt to do this; with your patient lying in the prone position grasp the leg so that your leverage will be very short, and press in the manner I show you. By using this short, leverage and working the leg backward and forward you will, in recent cases, be able to reduce the subluxation and restore the leg to its normal position. Let me tell you something more about this, however, in cases where you have it to do, where you know the leg must be straightened. Say the patient is a woman, she is going about and you want to restore the usefulness of her limb partially if not entirely. I have had such a case under observation for a number of years. There was a subluxation from cicatricial contraction; the limb was badly flexed, and I told her there were but two things to be considered—one was to try to straighten it, the other to cut it off. She said she would rather have it straight even if she did have to go about on crutches. On the strength of that, before the class of this college, she was given chloroform until profoundly relaxed, and by this short leverage plan I broke up the adhesions gradually, brought the limb to almost a perfect position and put it in plaster, which she wore for two months. She was so much pleased and the limb looked so nicely in that position that she

quite insisted that I make it perfectly straight. In doing so I dislocated it and have on frequent occasions since shown her to the class and expect to do so during this session. I dislocated the leg so that the head of the tibia rests in the popliteal space, and although there was considerable tenderness at first from pressure on the popliteal artery and the nerves in this situation, the leg was dressed in this position and she made a perfect recovery. This was six years ago, and the woman is now doing all her household work without assistance of a crutch, although the dislocation is complete. It seems that adhesions have formed around the dislocation which retain the parts in the changed position and she is only required to use a crutch when she goes out for a long walk. So where you have a dislocated limb in such a case you do not destroy the usefulness of the limb entirely, but unless you warn the patient and the family of the possible consequences you may be severely criticised and perhaps a suit for damages will follow. Always tell your patient or the patient's friends of the danger of completing the dislocation where there is a subluxation.

That there is a subluxation in the case before you is proven by the fact that you observe a sulcus, showing that the tibia moves only upon the posterior surface of the condyles of the femur. The child has been put profoundly under the influence of chloroform, and I am going to be extremely careful and try to straighten the limb, but I may be unable to do so. I am going to be content with straightening the limb to this position and putting it in plaster. We will first apply an abundance of cotton, carrying it well up on the thigh, and over this a plaster bandage. If you will observe the condition you will see that I have not reduced the dislocation perfectly, but I will fix it in this position so as to cause the child the least amount of irritation. If I can fix it in this position I will save him the trouble of sepsis, on the one hand, and perhaps tuberculous disease on the other. It is difficult to get a child to avoid soiling these parts with the urine, and we will use a piece of rubber cloth to be wrapped around the limb extending from the thigh downward, and instruct the mother as an additional precaution to put a napkin on the child to catch the urine.

You will see that I hold the foot at right angles while the plaster is being applied so when he gets up to walk the toe will not trip. This is a very essential point, especially in the child,

but it is also important in grown persons, for if you have the toe pointing in you will have tripping during locomotion, an accident which would otherwise not occur.

I am more convinced now than ever before that Dr. Dunn will find by taking a skiagraph through the plaster dressing that there is a subluxation in this case.

VACCINATION.

There is basis for the claim of Dr. Heman Spalding, Chief of the Division of Contagious Diseases of the Chicago Board of Health, that the records for the year should convince the most skeptical of the efficacy of vaccination as a preventive of smallpox. Since May, 1899, there have been forty-nine cases of the disease sent to the Chicago Isolation Hospital. Of these patients not one had ever been vaccinated. Nearly one-half of the sufferers came to Chicago from neighboring States, having contracted the disease before reaching this city. Many persons were exposed to the contagion, but careful investigation at outside points has shown that no properly vaccinated person contracted smallpox from the exposure, and that elsewhere, as in Chicago, the sufferers were all those who could show no mark on the arm.

Another feature of the records is that which shows that there was not a single case of smallpox among even the unvaccinated persons who were exposed but who received vaccination within a reasonable time after the exposure. Every policeman in Chicago has been successfully vaccinated, and though the smallpox patients are apt when weakness overtakes them to go at once to the police stations, not an officer has contracted the disease. Since the year 1894 there have been only four cases of smallpox among the school children of Chicago. The pupils are obliged to present certificates of successful vaccination before being admitted to school. Dr. Spalding says that the four children patients had such certificates, but in each instance the certificates were found to be false. The physician further declares, and it is certain that the carefully kept records bear him out, that the experience of the last twelve months clinches the fact that proper vaccination is an absolute preventive of the disease.—*Chicago Tribune*.

THE TREATMENT OF BURNS IN INFANCY AND CHILDHOOD.

By CHARLES WARRENNE ALLEN, M.D.,
New York,

Consulting Dermatologist to the Randall's Island Hospitals, Attending Surgeon (Department of the Skin) to the Good Samaritan Dispensary, etc.

IN attempting to formulate modes of procedure for the relief and cure of injuries to the skin produced by rays of heat or contact with heated substances, we are at once confronted with the peculiar fatality attached to extensive burns, which is probably more pronounced in the early periods of life than at any other time.

The exact cause of the quickly fatal outcome is, in many instances, so obscure that the clinician or therapist finds himself at a loss, and, aside from guarding against shock and fortifying the system against the exhaustion which will follow fever and suppuration, possesses few arms and little ammunition with which to fight off the insidious visceral complications.

In a general way it may be stated that when more than one-third of the cutaneous covering is involved in a severe burn the outlook is unfavorable.

We cannot here enter into a discussion of the various theories advanced in explanation of death within the first forty-eight hours, when there has been but little pain and when gastric or duodenal ulceration has not been found on post-mortem examination. If in a given case it could be determined that the leucocytes were being destroyed in a rapid manner or that oligocythemia were present, or that some toxin was making itself felt upon the heart threaten paralysis, perhaps a rational plan of treatment could be quickly instituted.

In a paper written several years ago Dr. Lustgarten advocated the use of atropin hypodermatically in these cases on the theory that the toxin formed is in the nature of muscarine, an extremely poisonous alkaloid discovered in putrifying fish, and being the active poisonous principle of the agaricus muscarius.

In one case it seemed to act beneficially, but I have never heard of atropin having been further tried. In children, of course, the dose would have to be proportionate to the age and severity of symptoms.

Burns in children are, for the most part, due to the accidental contact with hot water, sometimes to a bath of which the temperature has not been properly regulated, and occasionally to the application of the hot water bag or bottle. X-ray, electric and sunburns are not common in the very young.

A question of diagnosis is apt to come up now and then as between dermatitis calorica due to the careless bathing or prolonged contact with hot bottles, on the one hand, and some form of pemphigus or even of hereditary syphilis on the other.

Large blebs and areas of skin, the epidermis of which is being shed in large shreds, may be thought to be some skin disease when the true cause has been external and accidental. The association with irregular patches of erythema or possibly eschar will point to burning as the cause. On the other hand it has been my good fortune, at least twice, to make the diagnosis of pemphigus presenting an unusual amount of exfoliation when suspicion had been cast upon an attendant of having burned the infant.

In the milder degrees of burn the lesions are erythematous, but if the surface involved be very extensive the prognosis cannot even then be considered brilliant.

Although the pain is not usually very great at first, our first efforts are directed to calming the patient, and then to combatting the effects upon the nervous system which, as already intimated, may be excessive.

To meet the indications of sudden vital depression and shock aromatic spirits of ammonia in appropriate doses will generally be found as efficacious as anything. Unless the child is too young for the drug to be used at all, opium in dose proportionate to the age may be employed until a quieting effect upon the system has been secured.

As a local application, I know at the present time of no more promptly and permanently beneficial drug than picric acid for burns of the first and second degrees. Applied in a 1 per cent. watery solution it has the effect of giving almost immediate relief from pain and healing takes place rapidly

under its use. After the burned area has been coated once or twice with the solution a thin layer of absorbent cotton may be applied dry, over this a layer of impervious tissue, then as much cotton as is required for warmth, protection, exclusion of air, and germs, etc., and over this a loose bandage.

At subsequent dressings all may be removed excepting the layer next the skin which may be made wet with the picric solution and the dressings be applied as before.

Not only is the pain greatly diminished by not removing the dressing next the skin, but the danger of outside infection, leading to complications, is decidedly decreased.

To secure the same effects I at one time applied tincture of benzoin or aristol in collodion directly to the burned surface but this is attended with some pain in itself while the subsequent cracking and flaking of the collodion may act as an irritant. Dusting the parts with subnitrate of bismuth forms a protecting, antiseptic, and healing dressing, but all powders are apt to cake or harden and form lumps and after a time cause irritation. Iodoform, which has been such a favorite dressing for so many, has never been so with me. I never employ it at all, because of the odor, if anything else will answer as well and because of its marked tendency to cause local and general poisonous effects. Iodoform dermatitis is not uncommon in the young, and fatal poisoning has been reported from its external use in a child two weeks old.

The pain of erythematous areas may be greatly relieved by local baths containing nitrate of potassium or bicarbonate sodium in saturated solution. Where there are raised water blisters these may be carefully cut away at the edge and a layer of cotton soaked in a saturated solution of potassium chlorate, to which a little glycerine is added, may be applied over the wound, as suggested by Lutand.

In deeper and extensive burns a permanent bath offers one of the best means of securing comfort and warding off a fatal issue. A single limb may be placed in an improvised or especially made long, narrow tub arranged for continuous inflow and outflow of water, or the water can be frequently renewed, keeping the degree of warmth pretty constant.

The permanent bath for the entire body as employed for burns with excellent results in the Vienna Hospital can be im-

itated in the severe burns of infancy, since the comfort of the sufferer repays the pains taken to carry out the method.

As the granulations form and tend to exuberate a better cicatrix than otherwise can often be secured by brushing over the surface a strong solution of nitrate of silver or passing over the granulations with a solid stick of silver.

Among soothing remedies the old "carron oil" is the best known and probably most extensively used. It has the advantage of being easy of preparation from ingredients usually at hand or easily obtained.

For several years I have been accustomed to add some antiseptic to the lime water and olive oil as they are being stirred into the mayonnaise-like dressing.¹ For this purpose boric acid powder (5 per cent.) or thymol (1 to 1,000) or carbolic acid (1 to 500), or orthoform (1 per cent.), or any one of a number of other antiseptics may be used.

In some cases I have used the 3 per cent. methylene blue solutions which I have recommended in infantile intertrigo, eczema, etc., also in burns, but although it is somewhat analgesic the results are not to be compared with those from picric acid, which I have mentioned.

Various soothing ointments have been advocated and are made with boric acid or salol, or bismuth may be used. Vaseline seems at times irritating, so that it may be better to employ lanolin and lard in any given case.

One important point, it seems to me, is to refrain from removal of the dressings. If thin layers of gauze, cotton or cheese-cloth come next the wound these need not be taken off, but the application, whatever it may be—solution, oil, or ointment, may be applied over and through the dressings. In this way the chances of subsequent infection are also lessened, and if there was no primary infection the chances of extensive suppuration are reduced to a minimum. The more the atmospheric air is excluded by surrounding the parts with absorbent cotton the less will be the mechanical irritation, while injurious friction, admission of germs, etc., will be guarded against.

EDITORIAL COMMENTS

Ehrlich's Hypothesis in Regard to Immunity.

That a specific antitoxin will in some manner neutralize the toxin of a given infectious disease has been pretty generally recognised as established.

That blood serum of animals infected with certain diseases will cause destruction or agglutination of the specific organisms of those diseases is also well known. To explain these phenomena and bring them under general laws Ehrlich announced his ingenious hypothesis which has been received with general enthusiasm, some even likening it to the periodic law of Mendelejeff as a working hypothesis. The logic of Ehrlich is certainly open to objection as almost everything is assumed from beginning to end. The first portion of the law can well be criticized as lacking that well known logical basis known as *vera causa*, in that he assumes for too much in regard to the structure of the protoplasmic molecule about which little is known. His views are ingenious however in pointing out quite conceivable ways in which immunity may be produced.

To explain the nature of antitoxin he considers the protoplasmic molecule to be composed of a closed chain with side chains many of which are only partially satisfied, and that it is only through some of these unsatisfied side chains that various food substances and other chemical compounds can be brought in relation with the protoplasm. Now the toxin molecule becomes united with some one of these unsatisfied side chains and in this manner acts upon the protoplasm. Unless there exist side chains capable of combining with a given substance, that substance is non-toxic for the protoplasm of that species of animal. In this way he would explain why certain plants are poisonous for one species of animal and can be eaten with impunity by another.

Now when gradually increasing doses of toxin are administered to a susceptible animal, at first a certain number of side chains will be satisfied and the protoplasmic molecule will be in a manner affected. The functions of the cell of which the protoplasmic molecule forms a part will be altered but the cell need not necessarily be destroyed. On the contrary it may be stimulated to endeavor to replace the now saturated side chains. The cell having thus acquired a tendency to produce a particular variety of side chain furnishes more than are required by the protoplasmic molecule. The superfluous ones are cast off and circulate in the blood as antitoxin.

This hypothesis would explain the difference between active and passive immunity. Active immunity is that form resulting from stimulation of the cells of an animal to produce side chains, while passive immunity is that form produced by the introduction of side chains formed in another animal. This also explains why active immunity is of longer duration than passive, as the former lasts so long as the production of side chains continues; whereas the latter lasts only until the antitoxin which has been administered is eliminated.

Agglutination and
Cytolysis

This portion of the hypothesis is somewhat more difficult of comprehension. Something is needed to account for the agglutination or destruction of bacteria which is known to occur. This other factor has been called an alexin. Some light is thrown upon this phenomenon by observing the action of the sera of certain animals upon red blood corpuscles under different conditions.

The serum of an animal which normally does not possess agglutinative or cytolytic powers may by frequent injections of the blood of another animal be made to acquire these powers over that particular blood. If cytolytic goat serum be heated to 40°C. it loses its cytolytic power, now this power is immed-

ately restored by the addition of a minute quantity of serum of a normal goat. There must then be two substances, one in the nature of an enzyme which exists in normal serum and is destroyed at 40°C. and another, which is termed by Ehrlich the immune body and is unaffected by this temperature. This immune body is never present in the normal individual and is developed only during infection. This immune or intermediate body serves to attach the ferment or endbody to the bacterial cell and so bring about the destruction or agglutination of the latter. T.

THEIR FIRST APPEARANCE IN SOCIETY.

The Gentlewoman, a weekly journal published in London, has added a new department. It is headed "Christenings," and it purposes to give a full account of this important event in a young person's life, including a list of the presents received, the officiating clergyman, and the sponsors. The following, taken from the column, will give an idea of the way in which the enterprising editor will serve up the details of christenings. It has the added interest that one of the godmothers was a resident of this city:

"The first baby of John and Clara Headington, of Brookhill, Wokington, Berks, was born on June 20th, and baptized on the 23d ult. at Barkham Parish Church. The officiating clergy were the Rev. J. M. S. Brooke, M.A. (rector of St. Mary's Woolnoth, and St. Mary, Woolchurch, Haw), and the Rev. P. Ditchfield (vicar of Barkham). The little girl, named Myrtle Somerled, had as sponsors Miss G. McGorley, of Chipping Barnet; Miss Brooke, 20 Gledhow Gardens, South Kensington; Miss Lane, Gramercy Park, New York, and Mr. Thomas Eastman, M.A., of Northwood Park, Winchester. As mementos of the happy occasion the child was given a silver serviette ring with name engraved, a silver mug, two cheques, gold safety brooch with pearls, and a Bible, the fine christening cake coming from Messrs. W. & G. Buszard.

CORRESPONDENCE

To the Editor of PEDIATRICS:

While evidently unfair to discuss or criticize an abstract of a paper; yet I believe it unjust to the profession not to call their attention to the cardinal principles of the treatment of tubercular joint disease, which Dr. Tracy has well brought forward in his paper in the number of PEDIATRICS for December 1st.

The treatment of tubercular arthritis, wherever found, consists of—

1. Protection.
2. Fixation.
3. Unburdening, e.g., taking off the weight the part bears normally (as the hip).
4. Constitutional treatment.

Traction adds nothing and seriously hinders the carrying out of the constitutional treatment—fresh air and exercise. its use is limited to the correction of deformity, due in acute cases to muscular spasm. As soon as the muscular spasm ceases traction becomes useless, except for the fixation and unburdening it brings with it, as the patient is necessarily in bed.

Dr. Tracy advises the part to be ensheathed in a patent wood plastic material rather than in a plastic cast, yet confesses it to be deficient in strength, for he cannot “unburden the part affected except, as in hip disease, by having the patient walk on crutches. But why not use plaster of Paris? It certainly protects, it fixes the parts firmly when properly applied, it is strong enough to bear the weight of the body, and is cleanly. Bradford and Lovett say “Plaster of Paris bandages furnish an imperfect form of fixation, etc. . . . Furthermore the method is clumsy and uncleanly, etc.” We should then have to give up the operation of amputation of the breast, etc., because it cannot be done in our office—’twould spoil the carpet—and the application of a splint to a forearm because it is clumsy. The intelligent practitioner will no longer order from the nearest brace factory “a Thomas’s splint for a tall,

bow-legged, eleven-year-old boy;" but will apply either a plastic fiber to the part or, as I would advocate, plaster of Paris.

The technique is as follows: The part is well scrubbed and dried with alcohol. Then a tightly-fitting balbriggan garment is drawn over the part. If for fixation of the hip, the leg of a seamless underdrawer with the waist attached is drawn on. Beneath this one now draws a piece of flannel bandage, the whole length of the leg, leaving a good long piece projecting. This is a future scratch-band and assists in keeping the parts clean. If the spine is to be encased, a wide piece of cheap China silk, front and back, serves the same purpose. Above the balbriggan drawer we wrap one thickness of cotton wadding, placing extra pads upon all bony points—as the knee, the anterior superior spine, and the crest of the ilium. Next the part is wrapped in a wide flannel bandage, which should be done carefully, so as to bring the outline of the bony points just to view. And now a good quality plaster bandage is applied. The bandages (for a thigh) must be at least 6 inches wide, and the plaster fresh. The bandage should reach from the ankle well over the crests of the ilium and should be reinforced about the hip. After the plaster has begun to set, take a sharp knife and cut it out, so that it just embraces the crest of the ilium and the anterior superior spines, leaving the anus and genitalia free, and does not interfere with the flexion of the other thigh. A U-shaped piece of sheet steel $1\frac{1}{2}$ inch wide, with slight flanges above is now attached to the bottom of the cast so as to fit around the foot, and the job is done. Of course, one must wash up the floor, and scrub ones hands with sugar water, for the job is "unclean."

When a high shoe is placed under the sound foot, the patient walks upon the steel band and the weight of the body is transmitted upward through the cast to the pelvis. The fact that the child now walks without the previous pain, shows that the cast not only fixes, but also carries the weight of the body. The scratch-band now plays its important part, as it extends next to the skin from one end of the cast to the other, and can be changed, when soiled by sewing a new one to one end and drawing it out at the other. How long can we leave a plaster cast on? I have seen some cases in Professor Lorenz's clinic in Vienna wear them six months with comfort.

Decubitus can be avoided by cutting the cast out, so as to leave no rough or sharp edges. A trap can be cut over any abscess which may be present. Another great advantage of an "unremovable" cast is the fact that after once put on, the surgeon feels certain that he runs no danger of increasing the deformity by the faulty reapplication of a splint, cast, or brace.

The following history will illustrate my point: Ralph B., age 6, acquired Pott's disease at the age of 3; rest in bed for one year, after this plaster jacket for one year, which was taken off after one year because it was too small; no noticable deformity; Whitman spinal brace applied by instrument maker. When I saw the case, only three months later, there was an enormous kyphos of the lower dorsal and upper lumbar vertebræ. Mother said she never could get the brace on quite right. I don't blame her. It had eight adjustable straps and bands and fourteen buckles, and the pelvic girdle was but $2\frac{1}{2}$ inches wide.

Dr. WALTER G. STEIN.

Cleveland, Ohio.

FRESH AIR FOR INFANTS.

One of the most valuable points made in Dr. Holt's able address before the Cleveland Medical Society recently was the importance of fresh air for infants. It is a striking fact that this one thing makes not only a perceptible but an enormous difference in the mortality statistics of hospitals. Of the three essentials of care, good food, and fresh air, the latter is by no means the least important, and the lack of these three factors determines the death-rate of 75% to 95% in our foundling asylums. It is not reassuring to note the fact that the wealthiest as well as the most intelligent people are taking the greatest pains to exclude fresh air from their houses. The modern house furnished with weather-strips to prevent drafts, and with either steam or hot-water heaters which provide no ventilation at all, or a furnace with an air-shaft which draws its supply from the hall, thus preventing an influx of pure air from without, is as well calculated to conduce to infant mortality as the most deadly of our foundling hospitals.—*Cleveland Medical Journal*.

ABSTRACTS

THE ETIOLOGY OF DIPHTHERIA AND THE VALUE OF ANTITOXIN; A FURTHER CRITICISM OF DR. HERMAN'S VIEWS.

Dr. A. ROBIN (*New York Medical Journal*, August 11, 1900) analyses the statements of Dr. Herman in the latter's article in the *New York Medical Journal*, April 28, 1900. In the present paper the author shows that the Klebs-Loeffler bacillus does bear an etiologic relation to diphtheria and that antitoxin is its natural antidote. Dr. Robin shows that Dr. Herman was mistaken in saying that since the advent of bacteriologic diagnosis the number of diphtheria cases has nearly doubled, and gives a table which proves that, thanks to bacteriologic diagnosis, there are fewer cases of diphtheria reported. The next point considered is the decrease of the mortality since the introduction of antitoxin. Dr. Robin has collected statistics of over 75,000 cases of diphtheria from a number of reports, and shows that the mortality of diphtheria has been enormously reduced since the use of antitoxin has become general. The present writer also shows that the conditions of living among the poor of our large cities are not very much better than they were years ago, so far as liability to contagion to diphtheria is concerned. The last part of the article is devoted to a refutation of Dr. Herman's arguments against the etiologic influence of the diphtheria bacillus. Dr. Robin sums up his own views, as follows:

"A specific organism must fulfill the following three postulates:

"1. The organism must be constantly found in the infected area.

"2. It must be obtained in pure culture.

"3. The disease must be reproduced in susceptible animals by a pure culture of the organism or its products.

"The Klebs-Loeffler bacillus (1) is found in the affected area in every case of bacillar diphtheritis, the latter making up from 75 to 95 per cent. of all cases of diphtheria. (2) It is obtained in pure culture. (3) The disease is invariably reproduced in susceptible animals, and with sufficient frequency in man, to make the etiological relations evident.

"A specific must fulfill the following postulates:

"1. It must increase the percentage of cures to the maximum.

"2. It must reduce the mortality below a point ever recorded and keep it at or near that point.

"3. It must accomplish this without the admixture of other remedies.

"Antitoxin (1) cures every case of experimental diphtheria where the amount of toxin is known. It cures from 75 to 90 per cent. of all cases of human diphtheria where the amount of toxin circulating in the blood is not known. (2) It has reduced the mortality to 10-15 per cent., the lowest point ever recorded throughout extensive areas, and has kept it there

since 1894. (3) It does the work without the addition of any other medication, although in man symptoms are usually combatted with other drugs, just as they are in malaria and syphilis.

VULVOVAGINITIS IN CHILDREN.

Dr. H. B. SHEFFIELD in the *New York Medical Journal*, August 4, 1900, gives an interesting clinical study of this affection.

In speaking of the etiology of vulvovaginitis in children he says that but little is done to prevent the disease from spreading in public schools and baths, that many physicians still cling to the "scrofulous theory" of the affection and recommend tonic treatment. He emphasizes the importance of a careful microscopic examination of the discharge in every case of vulvovaginitis and upon the detection of gonococci the necessity of strict isolation and perfect cleanliness. To prevent the occurrence of gonorrheal ophthalmia he recommends the use of a snugly-fitting vulvar pad, held in place by means of a T-bandage, and the instillation of a $\frac{1}{2}$ per cent. solution of protargol into the eyes of the patient. To prevent the occurrence of peritonitis as the result of the propagation of the infection into the internal genitals he advises against the use of the douche, or, if the douche be used, it should be hung at a distance of not more than 2 feet above the child.

The treatment differs somewhat with each variety. Foreign bodies must be removed, and worms are easily destroyed by the use of small doses of calomel and santolin and by the use of injections of a strong decoction of quassia wood. For the arrest of the vaginal discharge he uses a 2 per cent. protargol solution in the gonorrheal cases, and a 1 per cent. solution of the same remedy in all other cases. When the mucous membrane is very sensitive a weaker solution may be used, but the writer has used a 5 per cent. solution without any ill effects. The following method is now used by the writer in treating cases of vulvovaginitis in children.

The child is placed in the dorsal posture, and the legs are spread wide apart. The exuding pus is wiped away with absorbent cotton, and by means of a glass syringe holding $\frac{1}{2}$ ounce a 3 per cent. solution of sodium bicarbonate is slowly and repeatedly injected into the vagina until the accumulated pus is evidently completely removed. This is followed by the injection, through a small soft-rubber catheter, of one or two syringefuls (depending upon the age of the child) of the protargol solution referred to before, and this is allowed to remain in the vagina about five minutes by bringing the labia closely together. This process is repeated from three to five times in twenty-four hours. When the urethra is implicated he prescribes the following crayon:

R	Protargol,	} each.....12 grains
	Iodoform,	
	Peruvian balsam.....	6 drops
	Extract of belladonna.....	1 grain
	Cacao butter	A sufficiency

M. Make twelve crayons 2 inches in length and $\frac{1}{8}$ inch in circumference.

Direct.—One to be introduced into the urethra once or twice a day.

In gonorrheal vaginitis he orders also the insertion of one of these crayons at bedtime. No irritation follows this method of treatment, and it is usual to find the gonococci, as well as most of the discharge, disappear within ten days. The strength of the protargol solution is then gradually diminished. The advantage of this method of treatment over all others in vogue can be well illustrated by the fact that, of the first 65 cases of vulvovaginitis under his care, none had been cured in less than four weeks, most of them running as long as two to four months, while under the protargol treatment almost all of them ended in recovery within three weeks. Furthermore, the forty-six cases of gonorrheal vaginitis which were treated with protargol were, with but one exception—inguinal adenitis—entirely free from complications. In painful micturition the administration of alkaline sitz-baths is very beneficial. At times alkaline diuretics prove useful. If there is severe pruritus, or if there are marked symptoms of inflammation of the genitalia, the child is put to bed and a powder of zinc oxide and starch is applied, special attention being paid to keeping the surface perfectly dry. It is a good rule to stop the use of the injections gradually and to keep the little patients under observation for at least two weeks after the entire disappearance of the symptoms. It is especially imperative that no case of gonorrheal vulvovaginitis should be pronounced cured unless three microscopical examinations of the vaginal secretion prove negative.

THE TREATMENT OF SUMMER DIARRHEA IN INFANTS.

C. G. KERLEY, in the *Medical News*, August 4, 1900, writes about the practical points in the treatment of summer diarrhea. The two chief features of a rational treatment of summer complaint are elimination and diet. The former removes the bacteria and their products from the digestive tract; the purpose of the diet is to give nourishment which will not furnish a favorable medium for the growth of germs.

If no vomiting is present castor oil or calomel should be given, in order to clear the intestines. If the infant is vomiting this symptom must first be controlled by diet and lavage.

As regards diet, the first thing to be done is to stop the milk, no matter whether it is breast milk, cow's milk, or peptonized milk, or condensed milk, or any of the milk foods. The younger the patient the more imperative is the necessity of discontinuing the milk. In some cases it will be necessary to keep the milk away only for twenty-four hours, in others it has to be excluded for weeks. The diet in such cases should be as follows: If there is vomiting the stomach should be washed, and nothing whatever given for a few hours, when a teaspoonful of water may be tried. If the water is retained it may be given every fifteen minutes. The next step is to give increased quantities of dextrinized barley water at long intervals. If the case is one of diarrhea without vomiting he instructs the mother to give from 3 to 5 ounces of the dextrinized barley, either plain or salted, to which is added from 1 to 2 ounces of chicken, beef, or mutton broth.

The broths must be given cautiously, for in some patients they have a decidedly laxative effect. The writer does not use white of egg in water, because many children fail to digest it. The amount of food given may correspond to that given in health, but it should be given in smaller quantities at shorter intervals. Plain boiled water may be given at any time for thirst. The use of a proprietary preparation of diastase for the purpose of predigesting the barley is recommended. A too strong milk mixture must not be given on resuming the milk diet, and the latter should not be commenced until the stools are nearly normal. The increase of milk should be gradual. In cases in which a child cannot return to milk in the smallest quantity until October or November, scraped beef, beef juice, and predigested cereals are our main reliance. A teaspoonful or two of some soluble proprietary food may be added to each feeding of dextrinized barley. In breast-fed babies the attacks are usually milder, and they can often return to breast-milk after twenty-four or forty-eight hours.

The writer uses practically but four drugs in summer diarrhea, the castor oil and calomel, already mentioned, and bismuth subnitrate and opium. The newer antiseptics and astringents are of but limited value. He uses large doses of bismuth subnitrate (12 to 20 grains) with aromatic syrup of rhubarb (3 minims) and water enough to make a dram. Opium should not be given unless the passages are more than six or seven daily. In cases where there is much fever and prostration 4-6 stools are of benefit as drainage, and opium and astringents should not be given. The best form of opium to give in such cases is Dover's powder, from $\frac{1}{4}$ to $\frac{1}{2}$ grain, every two or three hours for a child eight months of age. For the fever packs, baths and sponging are all that is necessary. Alcohol disturbs the stomach, and strophanthus, digitalis, or strychnine should therefore be given if stimulants are required. For uncontrollable vomiting a hypodermic injection of $\frac{1}{100}$ gr. morphine with $\frac{1}{600}$ gr. atropine may be given to a child one year old.

Irrigation of the colon, in the opinion of the writer, has been overdone. It is of great service when the stools are infrequent and foul. It is also useful in active cases with 6-8 passages, particularly if there is any blood or much mucus. The irrigations should be carried out at eight, twelve, or twenty-four hour intervals, depending upon the nature of the case. Boric acid or salt solution is to be used, or, if there is much mucus, a solution of tannic acid, 1 per cent. Two quarts are to be injected and the irrigation stopped when the water runs clear. A soft rubber catheter No. 14, English, should be used, and the temperature of the solution should be 95-100° F. The bag or syringe is to be suspended 3 feet above the child. A certain amount of water must first run into the intestine before it returns through the anus alongside the tube. The catheter is introduced for an inch or two and the water allowed to distend the colon before further introduction is attempted. In speaking of prophylaxis, Dr. Kerley says:

"It is not enough that the child be given sterilized milk and breast-milk; he must be made comfortable. The clothing should be of the lightest and on very hot days he should be in the open air in the shade, if in

the country; if in the city, the coolest room in the house or apartment is far better than hot, dusty streets. Whether in the city or country two or three fifteen-minute spongings with water at 60° F. will make the child ever so much more comfortable. Further, we know the digestive capacity is lessened during the heated term and the milk should be reduced in strength from one-fourth to one-third on the very trying days, adding water to replace the quantity removed.

"The mother should always wash her hands most carefully with soap and hot water before preparing the infant's food, before handling nursing bottle, nipples, or any nursing apparatus. The infection may be carried to the feeding utensils by the hands of the mother, other children may become infected, or reinfection take place in the one already ill. A child with summer diarrhea should not come in contact with other young members of the family, for summer diarrhea must unquestionably be placed in the list of communicable diseases."

A CONTRIBUTION TO THE SIGNIFICANCE OF KOPLIK'S SPOTS IN THE DIAGNOSIS OF MEASLES.

JOSE L. HIRSH, in the *Philadelphia Medical Journal*, August 25, 1900, studies the question of Koplik's spots, and draws the following conclusions:

1. An eruption limited to the buccal and labial mucous membrane and characterized by the presence of an irregular red spot with a bluish-white center, is always present in beginning measles.
2. These spots are present from twelve hours to five days before the cutaneous outbreak.
3. The number of these spots bears no relation to the severity of the attack.
4. These spots will be found in no other condition of health or disease.



FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.

ANNALES DE MEDECINE ET CHIRURGIE INFANTILES,
October 1 and 15, 1900.—*continued*,

Dr. KISCHINKY, Moscow.—(1) In each case there must be a clinical examination as well as a bacteriologic. (2) True diphtheria bacilli may be found in healthy mouths, especially in the crypts of the tonsils, without any evidences of pathologic effects. (3) Loeffler's are sometimes found in healthy persons outside of diphtheria epidemics. The isolation of such persons is only necessary when the epidemic is one of true diphtheria and not the light form of follicular angina. (4) Isolation of the patient is necessary, especially when diphtheria breaks out in boarding schools, etc. But the examination of both healthy and sick children and the closing of the institution followed by disinfection are too severe measures in such cases. (5) It is impossible to prescribe uniform rules for the treatment of healthy individuals with diphtheria bacilli in the mouth, because in some cases these bacilli are harmless, in others pathogenic. (6) Such establishments are only necessary in theory. Hospitals for the treatment of diphtheria are needed far more.

Dr. E. W. GOODALL, London.—(1) Makes a culture of the exudate on Loeffler's serum and if the long bacteria are found he makes the diagnosis of diphtheria. (2) Pseudo-bacilli are a separate species of germs. (3) The presence of true bacilli is worthy of attention, for it shows that there may be latent diphtheria. (4) Isolation of all cases for six weeks from the onset of the disease, if the patients are children, and for at least one month if they are adults. If there are any complications the isolation is prolonged. He does not make bacterial examinations to determine when the germs disappear. (5) Such institutions are very useful, but they are not necessary. (6) These persons need not be isolated, but if they have been in contact with a case of diphtheria in which the clinical signs were clearly defined they should be carefully watched in order to be able to isolate them as soon as the disease sets in. (7) No special precautions are needed on the part of nurses or physicians as regards their own persons, but they should be placed under treatment and isolated as soon as they notice the slightest symptoms of diphtheria.

5. The Treatment of Extensive Angiomas by Electrolysis. By Dr. P. REDARD.—Electrolysis may be used in all forms of angiomas, but especially in large, diffuse vesicular tumors. The author has obtained uniformly good results in a very large number of cases by the use of this method. The apparatus needed consists of a number of galvanic cells, which furnish the continuous current. A galvanometer is also necessary

in order to measure the force of the current used. The positive pole is represented by a number of needles, which are fine, sharp, yet strong and resistant. Gold or platinum needles are to be preferred to those of iron or steel. The author uses, as a rule, the naked needles without any insulating varnish. If the angioma is extensive several needles connected by wires to the principal wire of the pole are used. If six or eight needles are thus used simultaneously one can coagulate the peripheral tissues of the tumor by placing the needles around its edges. The negative electrode is made up of a metal plate of zinc or tin, covered with chamois skin. It must be made as large as possible in order to offer a large contact surface and thus to diminish the pain of the operation. It must also be placed as near as possible to the needles in order to avoid a diffusion of the current to neighboring parts and to secure local electrolysis. In angiomas of the face the author uses a concentric negative electrode which consists of a circular band of metal placed so that the tumor is in the center. The needles are thus as near as possible to the negative pole. This prevents any effect that the current may have on the nervous centers. The needles are introduced into the tumor at a depth varying with the nature of the case, and about 3 mm. away from one another. The current is then very slowly applied by moving the switch very gradually. When the galvanometer marks 10,000 ma. it should be interrupted for a few minutes. The intensity is then gradually increased to 25,000 ma. As a rule, greater intensities, exceeding 30,000 ma., are useless. In some very vascular angiomas the author uses from 20,000 to 60,000 ma. A current from 20,000 to 30,000 ma. gives firm, adherent scars, while one of lesser or greater intensity gives less firm and looser scars. The duration of the whole sitting should not exceed three to five minutes. If it is noticed that the skin becomes blanched and that the electrolytic action is too intense one should shorten the sitting. The current should be slowly turned off. Often the author reverses the current just before removing the needles, in order to prevent the adhesion of the needles to the tissues, and the occurrence of hemorrhage. The needles should be removed gently by a slight rotary movement. After the operation the region is washed with bichlorid and dressed aseptically. At first the sittings must be repeated every six or eight days until the tumor is nearly coagulated. Then they may be interrupted for two weeks or a month in order to observe the results obtained. The treatment should not be stopped until the tumor is perfectly hard, and if there are any red spots left use a single needle and with the positive current, or sometimes with the negative pole, multiple punctures are made in the places with an intensity of from 10,000 to 15,000 ma.

6. Serum Therapy in Pneumonia. By Dr. M. SPOLVERINI.—The author studied the clinical effects of Pane's serum, of normal serum from animals, and of human serum in pneumonia. He concluded that the latter serum was the most efficient of the three varieties examined. The serum was taken from convalescents after the crisis of pneumonia. It appears from the researches of Spolverini that this serum produces a considerable diminution of the mortality of pneumonia, but it cannot be termed a really efficient therapeutic agent in this disease.

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ORIGINAL ARTICLES

THE VALUE OF ALCOHOL IN THE ACUTE INFECTIOUS DISEASES OF CHILDREN.*

By AUGUSTUS E. BIESER, M.D.,
New York.

WHILE the admonition "*non nocere*" very pertinently applies to the abuse of alcohol, it does not apply to its judicious use. "*Abusus non tollit usum*" is just as wise and potent an aphorism to-day as in days gone by. Confining the gist of my remarks entirely to the judicious use of alcohol, permit me as a preliminary to the practical point of my paper to dilate a little upon the chief chemico-physiologic virtues of the remedy.

Alcohol being non-nitrogenous cannot form nitrogenous tissue in the body; neither is there any evidence to warrant the assumption that within the physiologic economy alcohol can, *per se*, produce fat, however often it can be transformed into fatty compounds by expert chemical manipulation outside the body. Therefore alcohol cannot be termed a *food* in the sense that it produces tissue.

Until 1860, when three French scientists disputed it, it was assumed that alcohol was entirely oxidized within the body. They claimed that it was eliminated unchanged. In taking, in the first place, intoxicating instead of therapeutic

* Read before the Northwestern Medical and Surgical Society, November 21, 1900.

doses in their experiments, and, in the second place, in making qualitative instead of quantitative deductions, to wit: in assuming that all the alcohol ingested was eliminated unchanged because of their failure to find any change in the small amount they discovered, they committed a great scientific fallacy, for had they made a quantitative analysis by distillation of the entire amount excreted they would have had to admit that the amount of alcohol eliminated unoxidized bore only a small ratio to the entire quantity ingested, hence most of the alcohol is eliminated, changed or oxidized, within the body.

Be that as it may, fever patients eliminate unchanged a very small fraction of the alcohol ingested. If in fever, for example, a tablespoonful of alcohol well diluted be given in divided doses it is practically all oxidized within the body. It is a fallacy to say that you can smell unoxidized alcohol in the breath; you really smell the volatile ethers formed within the body.

This thorough oxidation of therapeutic doses of alcohol within the economy yields energy in the form of heat and visible motion. Now, while alcohol does not possess the tissue-building functions of food it cannot be gainsaid that it possesses the fuel function of food in no mean degree. Regarded in this light and being, chemically speaking, intermediate between a fat and a carbohydrate, it has been found that two fluid ounces of ethyl alcohol equals 10 ounces of lean beef in fuel function. Furthermore, alcohol, by undergoing oxidation in place of the nitrogenous elements of the body in such exhaustive fevers as typhoid or diphtheria, saves tissue waste, stores up energy, and acts indirectly as a food, for if it cannot, *per se*, produce tissue it can at least do the next best thing, viz., save tissue in these diseases.

To show that alcohol does unquestionably save tissue it is only necessary to call attention to the three following well-known facts:

1. That urea excretion is diminished after ingestion of alcohol in therapeutic doses.
2. That confirmed drunkards, eating much less than ordinary people, still do not lose much in bodily weight.
3. That in exhausting fevers, shock, etc., where it is impossible to digest ordinary food, life is often sustained by

alcohol in a way not explained by the cardiac stimulation of the alcohol alone.

After absorption, alcohol, when administered in therapeutic doses in certain diseased conditions, has definite well-known effects upon the chemico-physiologic vital processes.

Alcohol exerts an antipyretic effect or reduces the bodily temperature, in the first place, by diminishing nitrogenous waste, as measured by the diminished excretion of urea from the kidneys, this urea diminution and the diminution in bodily temperature bearing a constant relationship to each other.

Alcohol exerts an antipyretic effect, secondly, by causing increased elimination of heat from the surface of the body. It may seem at first to add to the bodily heat already existing by warming up the skin and stomach by virtue of its causing dilatation of the peripheral arterioles with a corresponding increase in their blood supply; but on calm reflection it must be apparent to every intelligent capacity that it is this very increased peripheral blood supply with its concomitant increased heat radiation that causes the temperature to fall in the interior of the body. That this antipyretic effect is due to the factors just stated, and not to any effect of alcohol on the nerve centers of the brain can be proved by cutting the cord and showing that the same results ensue after as before section.

Alcohol after absorption has been shown to repress protoplasmic activities under the microscope, leading us to infer a possible antitoxic action on its part. It is certainly a very good local antiseptic.

Alcohol after absorption is an excellent, permanently acting cardiac stimulant in diseases demanding invigoration of the function of circulation.

While alcohol should not be given in every case of fever, certain definite indications exist which imperatively call for its use:

1. Persistence of a high temperature.
2. Persistence of a rapid, feeble, irregular, dicrotic pulse, whether associated with high, low, or irregular temperature.
3. Persistence of marked prostration.

Whenever this weird triad of symptoms obtains and persists in the acute infectious diseases of children, alcohol looms up as one of our most reliable remedies.

If, however, after giving alcohol the pulse becomes quicker

and more irregular, the skin hotter and dryer, tongue browner and dryer, breathing shallower and hollower, it means that the alcohol is doing no good even if it is doing no harm, it means that your little patient has passed from the stage of depression in which alcohol is of decided utility, to the stage of exhaustion of the vital powers, in which it is of no value; nor is any other remedy for that matter. Under such circumstances alcohol had best be discontinued. Depression of vital powers, no matter how alarming, can be successfully combatted by alcohol in conjunction with other powerful and quickly acting stimulants. Exhaustion of the vital powers, whether in old age or infancy, means death.

It cannot be too often repeated, that the living organism is in itself entirely adequate to cure all its curable diseases. The organism can safely be relied upon to rectify restorable pathological conditions if it is not hampered in its action by agencies too foreign to the organism. Hence in the treatment of curable diseases in general, and of the acute infectious diseases of children in particular, all our efforts should be directed to sustaining the vital functions and reinforcing the efforts of the physiological economy to eliminate toxic products, such as bacterial poisons or ptomaines; bodily poisons, such as leucomaines, chemical poisons, foreign bodies, such as splinters, bullets, foreign cells, such as protozoa and bacteria, and even entire animals, such as worms.

To quote from a paper by Dr. Baruch: "When you read the history of the healing art and see how for over 2,000 years the medical profession has been laboring under the error of fighting disease, the patient being the arena for the fray, suffering from friend and foe alike, you will not hesitate to join with me in paying a tribute of gratitude to the men (Bigelow and Holmes) who had the courage to blaze a way through the confining mazes of destructive and useless therapies to the only really constructive and useful therapy, the assistance of the *vis medicatrix naturae*."

Prof. Willard Parker expressed to his class as early as 1857 that he wished his pupils would study *materia medica* less and *materia alimentaria* more.

It may be conceded at the outset that in the acute infectious diseases of children, such as diphtheria, measles, scarlet fever, pneumonia, typhoid, the three following physiological

functions are always more or less disturbed, viz.: (1) vital function of nutrition; (2) vital function of animal heat production; (3) vital function of correlation of energy.

What agencies, barring specific remedies, or hydrotherapy, or removal, of cause where possible hamper the *vis medicatrix naturæ* less in the diseases above stipulated than alcohol judiciously used. I hope, as a result of my practical experience, to be able to convince my confreres that instead of hampering the organism in its benign fight to throw off disease, alcohol really aids the natural recuperative forces of the body.

What single drug so well meets the three disturbances of vital function just mentioned?

1. *Vital Function of Nutrition,*

By saving nitrogenous waste, as is evidenced by diminished excretion of urea, it certainly aids indirectly, at least, in restoring the vital function of nutrition in diseases where tissue-makers must be barred from the dietary. Barring tissue makers, what better substitute for food than a tissue saver like alcohol can we find?

2. *Vital Function of Animal Heat Production.*

By virtue of its making adequate provision for proper heat elimination from the periphery of the body—for it must be remembered that fever in general, and especially in the infectious diseases, is due rather to diminished elimination of heat than to increased production of heat—alcohol reduces the fever, thus keeping the vital function of animal heat production at its proper balance. Is this a hindrance or an aid to *vis medicatrix naturæ*?

3. *Vital Function of Correlation of Energy.*

Alcohol in a healthy person increases frequency and force of the heart's action; in a heart weakened by fever and depression therapeutic doses (here where the heart is rapid but feeble) increase the force by diminishing the frequency of the cardiac pulsations; the working power of the heart is increased in both instances. By keeping the pulse-respiration ratio as near to four to one as possible alcohol assists the natural recuperative powers of the organism in restoring the above vital function of correlation of energy.

By correlation of energy is meant mutual conversion of energy, that converted energy is never lost, merely transformed. Thus, in a child whose vital functions are merely

depressed, not exhausted, alcohol can induce the proper circulatory energy; this, in turn, is apt to induce the proper respiratory energy; both of these in turn are apt to cause the proper secretory and excretory energy, one being, as it were, dependent to a large extent upon the other.

Coming down to the practical part of my paper—the treatment of diphtheria, scarlet fever, measles, and pneumonia by alcohol—let us see whether the results of treatment in actual practice warrant the encomiums bestowed upon it in the preliminary discussion of the chemico-physiologic virtues; for clinical results after all transcend in value, at least as far as our little patients are concerned, the most learned and brilliant theoretical disquisitions. If anyone can give sufficient reasons to show that alcohol alone has snatched the severest types or even only one very severe type of any of the above diseases from the jaws of death, he has showed that alcohol has been weighed in the scale of experience and has not been found wanting. This, I hope, to be able to show.

1. *Diphtheria*.—I think it is a reasonable estimate to say that 95 per cent. of ordinary diphtherias get well on rational treatment. It is the laryngeal and, in my experience more especially, the septic naso-pharyngeal cases that swell the mortality. In a total list of 195 diphtheria cases treated by mercury, iron, and whiskey (especially whiskey), including 17 laryngeal diphtherias (9 per cent.), 10 septic naso-pharyngeal cases (6 per cent.), and 6 cases in infants one year old or under ($3\frac{1}{2}$ per cent.), I have had 11 deaths. I attribute this favorable result in general to the alcoholic support given. While antitoxin, according to the consensus of present medical opinion, saves more laryngeal cases than the former supporting treatment, it is at present still a mooted question whether septic naso-pharyngeal diphtheria has been benefitted by antitoxin alone. Even Dr. W. H. Park, in a paper read before the Pediatric Section of the Academy (October 11, 1900,) says that antitoxin is generally of no avail in sepsis and broncho-pneumonia complicating the worst cases. It is just in these cases (see PEDIATRICS, December, 1896, "Antitoxin in Diphtheria.") that I recommend above all whiskey in conjunction with iron and mercury, sepsis and broncho-pneumonia being the diseases which more than any others give evidence of that triad of symptoms which imperatively demands, not alcoholic stimulation merely, but alcoholic support.

ACUTE ARTICULAR RHEUMATISM IN CHILDREN.*

By FRANK C. SIMPSON, M.D.,
Louisville, Ky.

ONE of the most interesting subjects in medicine at the present time is acute articular rheumatism in children. I am of the opinion that each year is giving us greater assurance that this disease is to be classed among the acute infections, and while the causative agent has not yet been found, our knowledge is more definite in regard to it than is the case with scarlatina and many of the other well recognized infections. The belief is growing stronger and stronger that acute rheumatism is an infectious disease.

The term "rheumatism" has been loosely applied to almost any affection accompanied by pain and tenderness of the joints and muscles. A child is rarely seen bound down hand and foot with rheumatic inflammation of the joints, unable to move, as in a typical case of rheumatic fever in the adult. There may be some stiffness or tenderness, giving considerable pain on motion, but the patient is able to move about; redness or swelling about the affected joints is seldom present, and the temperature runs low, seldom going above 103° F. One of the earliest symptoms encountered, in fact one of the symptoms that calls our attention to rheumatism, is a heart murmur, the result of an endocarditis. Pain may be present for a few days before the heart becomes involved, and again attention is first called to the rheumatic condition by discovery of the heart involvement. In the greater number of these cases there is a hereditary taint, one of the parents at some time having had rheumatism.

I do not remember to have seen a case of articular rheumatism in a child that did not begin with an attack of indigestion; this is accomplished by fever which runs along for five or six days before the development of pain about the joints or stiffness of the muscles. I find the knees and muscles of the neck most frequently affected.

* Read before the Louisville Medico-Chirurgical Society.

The most common and immediate cause of rheumatism is chilling of the surface of the body. Exposure to cold is most effective in the production of the disease when the body has previously been heated by exercise or sitting in a hot room, the skin perspiring and its vessels relaxed; the surface thus cools more rapidly through the evaporation of the perspiration and the exposure of larger proportions of blood in the dilated cutaneous vessels to the cooling process.

The disease is most prevalent in cold and temperate climates and in the spring and winter months.

One of the most certain predisposing causes is heredity. The percentage varies from 20 to 60 per cent. It would appear that with a family history of acute rheumatism in immediate blood relations, especially in father and mother, the chance of any child with such hereditary predisposition contracting acute rheumatism is about five times as great as that of a child whose family history is free from such taint.

Dr. Goodhart records a remarkable instance of hereditary and constitutional predisposition. Five out of six children of parents, both of whom were rheumatic, had either joint affection or heart disease. All the children were under fifteen and the only one unaffected was an infant of 14 months, showing that the disease is rare in the first five years of life. None of the children was under five, and the youngest affected was seven.

Steiner relates a still more remarkable extreme, where, out of twelve children of a rheumatic mother, eleven had rheumatism before the age of twenty, only one occurring under the age of five. It seems that the tendency to the disease is intensified by inheritance. It has been contended that the occurrence of rheumatism in several members of a family is due to the influence of climate and locality rather than to inheritance. A careful enquiry into this point has shown that it is not so. Individuals of the same rheumatic family contract the disease when widely separated in different places and under different sanitary conditions. Change of residence appears to have small influence upon the results.

Acute rheumatism is more frequent in girls than in boys; the reverse is true in adults. It is more frequent among poor children, especially those who frequent the out-door clinics. I might say among the upper classes it is quite rare, though occasionally it is observed in early infancy. Henoch reports a

case in a child of 10 months, where there was a well-marked attack. I have never had the fortune to meet with a case so young.

One explanation is that it is due to accumulation of lactic acid in the blood, so suggested by Prout. The lactic acid is supposed to act as a direct irritant to the tissues. Senator has supposed that the lactic acid produces its effect by its action upon the central nervous system, and that the disordered nerve centers react upon the joints causing pain and fever. Dr. Winter says that acute articular rheumatism is an infection and that it comes from the digestive organs. This seems to be the opinion of the majority of the leading men of our country, that the disease is due to a microorganism developed in the digestive organs.

One of the grave complications is endocarditis; in fact, fully 75 per cent. have endocarditis. These children seldom lose their lives in the primary attack by the heart becoming diseased, but the heart is left in a crippled condition for the remainder of their lives.

In regard to treatment the salicylate compounds are still the principal remedies in the treatment of acute rheumatism. Salicylates are as a general rule palliative and act by relieving pain and reducing temperature, but exert little influence in shortening the duration of the disease.

In children salicylates have to be used sparingly, as they produce so much depression. I have seen the salicylates relieve an attack of acute articular rheumatism as readily as quinine would malaria. They must be given, however, in large doses and be continued for only a short time. Even if they fail in cutting short the attack they must be discontinued. In some instances 60 to 100 grains may be taken before the stomach rebels, and again the stomach will reject very much less. There may be great depression in circulation. I have seen the pulse reduced to 50 from large doses of the salicylate of soda. Oil of wintergreen is effective in some cases, but is objectionable because it upsets the stomach.

I am a great believer in the alkaline treatment following the use of salicylates. I find it assists in controlling pain and fever and never affects the stomach. One has to be careful with these little patients as the heart is so readily affected. Rest in bed is the only safeguard against endocarditis, and

that does not always protect, as about 80 per cent. have some heart lesion. The salicylates do not protect from heart complications, as is generally supposed. I use opium in small doses where endocarditis has become established, and keep the patient in the recumbent position.

For the extreme anemia, which is often present, I find pepto-mangan one of the best tonics to build up the blood system and in addition to this I instruct that the patients be kept in the open air as much as possible. When they are able to walk they should be allowed to take moderate exercise in order to strengthen the heart muscles. I do not know of any one treatment that does so much to restore these lost forces as light athletics. After these patients are once built up they live very comfortable and moderately long lives.

DISCUSSION.

Dr. J. G. CECIL.—Acute articular rheumatism is to me one of the most interesting of all diseases; it is also one of the most common; but the disease in infants must be comparatively rare; in thinking over my cases of acute rheumatism I can remember but a limited number that have occurred in children under five years of age. Rheumatism, I think, selects its victims very much in the same way that tubercular trouble does. Most of the cases of rheumatism we see develop in young adult life, and as indicated in the paper just read girls are a little more frequently attacked during the first two decades of life than are boys. After that male adults are more frequently attacked than females, from the fact that they lead a more exposed life.

I was glad to hear the essayist indorse the theory, and it is only a theory yet, that acute rheumatism is probably of an infectious character, a germ disease. I have for some years held that idea, and was strengthened in the belief by an article which appeared in one of the first volumes of the "Twentieth Century Practice," written by McClagan; it is one of the most readable articles on the subject that has come to my notice. The arguments adduced are very convincing; in fact if you admit his premises you are obliged to admit his conclusions. He did not claim in this article that he had discovered the microorganism which produced the disease, but he was disposed to believe from the clinical aspects, course of the

disease, and the treatment which is best adapted to its relief, that the organism producing acute rheumatism was similar to that which produced malaria and the parallel between these two diseases, under the magic pen of this writer, is very striking.

One point emphasized by the essayist is of considerable importance, that is, the tendency to involvement of the heart. I noticed that the doctor spoke of it as a complication. I hardly think of it in that way at present. I do not believe the heart attacked by rheumatism is any more of a complication than the knee-joint or the shoulder-joint. In other words, I think it is just as much a part of rheumatism to have the heart involved as it is to have any large joint. There are thirteen sites or special locations for the development of acute rheumatism; these are the twelve large joints and the heart. While the essayist clearly pointed out that heart involvement is exceedingly common, I think it is even more common among young children than it is among older persons; in as much as 80 per cent. in some classes of cases we have the heart affected. It is undoubtedly true that in a great many cases the heart complication, so-called, is not observed, and we can by no means that I know accurately say when the heart is or is not involved. The mere discovery of a murmur is not by any means a sufficient or safe guide. It probably does not occur in the majority of cases. If a murmur is present it may only indicate a thin condition of the blood. I take it that probably in the majority of cases of murmurs that are discovered in the first attack of rheumatism, it would be hemic rather than valvular in character. We know that the poison of rheumatism makes a profound impression on the blood. These patients are usually, especially during convalescence, decidedly anemic. This is one of the points which bears out the theory that it is of infectious origin, that it makes the same impression on the blood as do the malarial diseases, also syphilis, scarlet fever, measles, and nearly all other infectious diseases. The blood is often profoundly impressed.

As to the management of these cases, I do not know that I have anything of interest to add to what has already been said by the essayist. His position in regard to the use of the salicine compounds is correct. If you are going to use them, do so boldly for a short time, then cease. You are bound to do

this because the stomach will usually reject them after forty-eight hours. After that the alkaline treatment is about all that is left to us. During convalescence out-door exercise, etc., do a great deal towards building up and restoring these patients to health. The iron compounds are indicated where there is much anemia. There is nothing we can do to prevent the heart from becoming involved any more than we can prevent involvement of the knee-joint, the shoulder-joint, the elbow, or any other point which rheumatism may select. We cannot prevent it nor can we always know when it happens. The best clinical evidence of the heart becoming involved in an attack of rheumatism is an intermittent and irregular heart action, frequently accompanied by more or less pain.

Dr. T. L. BUTLER.—I would like to ask Dr. Simpson if he could get a double aortic murmur in acute rheumatism without organic valvular lesion? I am led to ask this question because I have recently had a case where there was first a mitral murmur, and afterwards a marked double aortic murmur.

Dr. A. BATE.—I would like to say that I believe rheumatism to be a disease of malassimilation, and that infantile rheumatism is probably due to an inherited inability on the part of the cell to perform complete oxygenation. The use of the salicylates, as mentioned by the essayist, is the correct treatment in my judgment.

Dr. T. S. BULLOCK.—Whereas rheumatism in very young children is considered rare, still it not infrequently occurs. In my slight experience I have seen several cases. I was struck by a report in one of the medical journals not long ago of quite a number of cases in children under five and also in infants, where no evidence of inherited rheumatism could be discovered. One case was a child aged 18 months. This subject was discussed not long ago in the New York Medical Society, and the report appeared in the *New York Medical Journal*. Dr. Winters showed some clinical cases before the society. I have known of several cases of rheumatism in early infancy.

Dr. LOUIS FRANK.—Cases of rheumatism are more common in children than we ordinarily suppose. All those so-called growing pains in children are really rheumatic manifes-

tations and not growing pains, as they have heretofore been called. However, it is hardly proper to class all these cases in the same category. I remember in one of the German clinics to have heard the statement made by the lecturer that all cases which did not yield to the salicylates in three days were undoubtedly gonorrheal in character. This is a broad statement and one which it is hard to believe although we are all aware of the wide dissemination of gonorrhea. Their method of treating rheumatism there at that time was in marked contrast to what I had been taught. Salicylates were given to adults in 4-gram doses twice a day, which would be 120 grains *per diem*, continued for three or four days. At the end of this time, if there was not decided improvement, the cases were treated by means of alkalies, and fixation of the joints, etc., largely upon the assumption that the trouble was due to gonorrhea and not the so-called acute rheumatism. In the dose mentioned salicylates did not seem to have any deleterious effect. I further remember at that time it was claimed there was no doubt that the treatment of chronic cases of rheumatism, whether gonorrheal or otherwise, by means of the alkalies had a marked influence upon the occurrence of heart lesions as a concomitant to the joint affection or as a complication.

I would like to have heard the essayist bring out, and probably he will so do in closing the discussion, the relationship between throat diseases, which we so often see in children, and rheumatism. It is now recognized, I believe, that there is a distinct relationship between these diseases. Possibly here is the point of infection in many of these cases. I wish he had also said something about the relationship between chorea and rheumatism; as undoubtedly there is a direct relationship between these two diseases, especially in young children.

Dr. F. C. SIMPSON.—In answer to the question asked by Dr. Butler, I have never seen a double aortic murmur in a case of acute rheumatism.

In regard to the point made by Dr. Frank—in many cases in children under five years of age we find throat diseases, particularly tonsillar involvement, where it has not been shown that there is any rheumatic evidence beyond the heart complication and I do not believe we can say these are all rheumatic in character. This is just the point Winters makes in

the cases he reports. In young infants you may have no evidence of rheumatism except the mere fact of the endocardial trouble. I do not take it that these little patients have chorea, yet they go on and develop these heart troubles, and it seems to be a fact that various throat troubles in children are followed by endocardial complications. There is an article in the January number of the *Journal of the Medical Sciences*, citing a number of cases of heart lesions due to tonsillar disease.

The paper read this evening was suggested by the case of a little girl, four years old, whom I attended recently; she died of endocardial trouble. There was no family history, as far as it was possible to determine, of rheumatism; still the father of the child is now down with a rheumatic attack, showing that it probably played an important part in the child's case. The child seemed to be unusually healthy; it had never been sick, yet it had that characteristic pale and anemic appearance which we see so frequently in rheumatic patients. The child's illness began with an attack of indigestion. I saw it one afternoon, and the mother said it had been vomiting and had some little fever the day before. I did not see the child again for three days, when it still had some digestive disturbance and a slight rise of temperature. It went along for a week in that condition, and I was undecided as to just what was going to happen. At the end of the tenth day there developed some joint pain. I had examined the child's heart the day before pain in the joints appeared and discovered nothing wrong, nor did I find any heart involvement until the third day after the joints became painful. The child went on with a very active endocardial trouble and died at the end of the fourth week from the date its illness began.

Rheumatism may be due to an acute septic process; the blood is infected and whatever originates the infection may produce the septic effect. I would not make a positive statement about this, however, because I do not know. Young children have sweats which are not characteristic sweats; they do not have chills; they do not have the line of symptoms which we would expect from a sepsis.

I believe the so-called growing pains are all rheumatic in character, but this is a different condition from acute articular rheumatism. I do not believe there is any such thing as growing pains.

ABDOMINAL TUMOR IN AN INFANT.*

By J. GARLAND SHERRILL, A.M., M.D.,

Professor of the Theory and Practice of Surgery and Clinical Surgery in
the Kentucky University, Medical Department, Louisville, Ky.

THIS little patient I first saw with Dr. Samuel E. Woody. The case is of considerable interest, and perhaps Dr. Woody can tell you much more about it than I can myself. The child is 11 months old, and has had an enlarged abdomen for the past three months. Upon examination we find the abdomen considerably distended, and on percussion we can make out dullness on the left side extending from beneath the ribs down to the level of the anterior superior spinous process. On the right side, about the margin of the ribs, where we should expect to find the normal hepatic dullness no such dullness is discovered; there is some tenderness about the abdomen and on manipulation we can feel the margin of a tumor which, on the left side, reaches down below the level of the anterior spine; there is a sharply defined margin to the growth, and, to my mind, the tumor is a misplaced liver.

I have not examined the child for several days, but the conditions stated can be easily made out. Probably if the liver were in its proper place we should say that this was a malignant tumor of the spleen—a sarcoma.

Another point is that there is no well-defined notch which we should expect to find in an enlarged spleen.

Dr. W. O. ROBERTS.—It strikes me that it is a case of sarcoma and I believe it is located in the kidney. Sarcoma of the kidney is not unusual in young children, in fact it is much more commonly found there than in any other abdominal organ and of all the cases I have seen they were nearly all on the left side, and they all had what I detected in this child, viz., a resonance of the colon over the anterior surface of the tumor.

* Abstracted from proceedings of the Louisville Surgical Society.

I recently saw a child a little older than this with a sarcoma of the kidney which filled the entire abdominal cavity. It was at first doubtful whether it was a sarcoma of the kidney or the spleen, but exploratory operation confirmed the diagnosis of sarcoma of the kidney; the kidney was removed and the child lived about six months. I have seen a number of other cases since that. That was the second one of the kind I had operated upon, and both of the children lived several months after the operation and then died of a recurrence of the growth.

The only thing in the case before us against the theory of sarcoma of the kidney is that the edge of the tumor is rather sharp.

Dr. JAS. B. BULLITT.—The case presents several points of great interest. It seems to me there is grave doubt about the diagnosis. I notice one thing which has not been mentioned, viz., that the child has a general lymphatic enlargement, not only in the groin but in the neck also; the superficial lymphatics are enlarged.

I was not able to satisfy myself by gentle percussion that we cannot determine liver dullness on the right side. I therefore believe that the liver is on the right side, and that this tumor, in all probability, is not the liver. The tumor itself occupies the position where ordinarily one of two tumors would be found in the child, viz., a tumor having its origin in the spleen or in the kidney. Kidney tumors are more prone to seek a lower level than this tumor occupies. Another peculiarity about kidney tumors is the fact that the edges are apt to be rounded, which is also apt to be the case with any malignant growth involving any one of these organs, unless what you feel is the normal portion of the organ and the malignant growth has taken place in some other part of the organ. This would be true, of course, except in case of the liver or spleen, where the growth has been gradual and progressive enlargement in the nature of an hypertrophy of the entire organ had taken place. Therefore, I take it, this tumor, whatever it be, is not a malignant growth but is rather an hypertrophied condition of some organ, not believing it is the liver, believing that the border is too sharp for it to be the kidney, I believe it is an enlargement of the spleen, as to the exact nature of which

I am not prepared to give an opinion. I do know, however, that all abdominal tumors in children which might be very well taken for malignant growths are not so, at least in so far as the prognosis and ultimate outcome is concerned. I had an opportunity to see a most remarkable case in a child a little older than this with a tremendous tumor involving the whole left half of the abdomen very much in the same position this tumor occupies only that it extended lower down; in addition to that the child had a scrotal tumor apparently of the right testicle; in addition to that it had several nodules in the skin in different parts of the body. There seemed to be every reason and justification in making the diagnosis of sarcoma of the kidney in the first place and of general sarcomatosis in the second place. An absolutely unfavorable prognosis was given by a surgeon in Louisville, and the child was then taken to another physician here who referred the parents to a physician of the same faith in another city of the state. The child was under treatment by the latter-mentioned physician for some time, and I learn from a reliable source that the tumor has disappeared so far as can be made out by an examination.

In the case before us I do not believe the growth is malignant, but I do believe it is a tumor connected with the spleen.

Dr. SAMUEL E. WOODY.—I have never examined this child thoroughly. It was referred to my clinic by Dr. Florence Brandeis, and as we were crowded that morning only a cursory examination was made and several specimens of blood taken. When it returned a few days later I was absent and my assistant called in Drs. Sherrill and Tuley to examine it. They made a much more thorough examination and diagnosed a displaced liver.

When I saw it again the belly was so tender I could neither percuss nor palpate satisfactorily. I have seen enough, however, to make me doubt its being a case of ptosis of the liver. The mother, a fairly intelligent Jewess, tells us she first noticed the tumor about three months ago and that it has grown steadily. It can hardly have been congenital, for it is incredible that so large a tumor as a floating liver should so long escape notice, especially in an infant constantly handled and exposed. On the other hand, I cannot conceive how so extensive a hepatoptosis could occur in the child's short life of

11 months. Heavy as is the infant's liver it would have to drag a long time to produce such extreme elongation of the ligaments, especially the vena cava, which suspends the liver very much as the aorta does the heart. Besides, the descent of the liver is resisted by the tonicity of the abdominal walls, pushing the intestines up against it. Though I have not known of such a case, I can readily see how in the person of an old woman, such a descent might be made by a liver hanging for years unsupported in an abdomen weakened and flaccid from the distension of previous obesity, ascites, or pregnancies. But this seems impossible in the infant.

I must admit that the size of this tumor is about that of the normal liver and of somewhat similar shape and presents itself some what as the liver would. for in descending, the liver, being most fixed posteriorly, would tilt forward, the anterior border becoming the inferior, the posterior the superior, and the smooth, convex upper surface would look forward just as does this tumor. The bulging of the left side might mislead us into thinking the right is sunken. But there is no collapse of the right hypochondrium, as would necessarily follow a prolonged absence of the liver. Furthermore, a strip of dullness about the seventh rib anteriorly and the eleventh posteriorly is distinctly perceptible. This dullness is more pronounced and wider posteriorly than in front, where the intestines distended with gas are pushed up against, and perhaps envelop, the liver's edge giving it more or less tympanitic note. I believe the the liver is in place.

Of course, almost any tumor in the flank, especially the left, would suggest sarcoma of the kidney, but that would be roundish and nodular and would fill up the space between the ribs and the crest of the ilium. The tumor in the case before us, however, is smooth and has sharp edges; I can feel well behind the posterior border and find an empty space in the loin. I feel a distinct notch in the anterior border just above the umbilicus.

The fact that this tumor has the usual shape and site of an enlarged spleen, and the further fact that no other hypothesis fits the case forces me to make, at least provisionally, a diagnosis of splenic tumor. Whether the enlargement was due to sarcoma or malaria I am unable to express an opinion. The blood examination showed some increase of the white corpus-

cles, but not enough for leukemia. In one specimen, at least, the plasmodium was discovered. For several days the patient has had quinine and arsenic and inunctions of biniodide of mercury over the tumor. Under this treatment the tumor seems to have shrunk about three-eighths of an inch.

Dr. LOUIS FRANK.—I agree with Drs. Bullitt and Woody, that this is not a liver tumor but rather a tumor of the spleen, Dr. Woody has brought a good many valuable points in regard to the diagnosis but I would also call attention to the fact, bearing upon the possible malignancy of this growth, that we find the superficial vessels are much enlarged over the abdomen. That might be said to indicate some hepatic obstruction; I think there is some dullness over the hepatic region.

This tumor has not the characteristics of a dislocated liver. Again, we rarely find the liver displaced in a child of this age unless there is a transposition of other organs, which is not the case here. Often in older persons we find displacement of the liver accompanied by transposition of other organs. I have in mind a case in which there was displacement of nearly all the abdominal organs. I believe further in the case before us we can make out by palpation the line of liver dullness extending a little below the ribs. The intestines certainly occupy a much larger space than normally in the abdominal cavity.

This tumor springs from the splenic region, it does not occupy the region of a kidney tumor. On account of the enlargement of the lymphatic glands, the appearance of the child itself, the enlargement of the superficial vessels, I believe this is a malignant tumor probably springing from the spleen.

Dr. J. G. SHERRILL.—I gave my reason for believing this to be a tumor of the liver, viz., I examined very carefully for the notch and it could not be discovered. If it is the spleen it must have a notch; I have never seen a splenic tumor that did not have a notch; if this were a splenic tumor it would most likely be oblong in shape corresponding to the spleen; it would be larger at one end than the other. While the liver is larger at one end than at the other still the difference is not great. The sharp margin I take to be the edge of the liver; the round surface appears very much like the upper surface of

the liver, and while, of course, we do not expect ordinarily to find it in this position, still I believe this is the liver, and that it was displaced before birth of the child; I believe it is not a recent growth.

The fact mentioned by Dr. Frank, viz., distension of the superficial abdominal veins, is not likely to occur in splenic tumor; it is likely to occur in hepatic tumor; in this case we may have a slight enlargement of the liver, although this tumor appears about the normal size of a child's liver. You will remember that the liver of a child is very much larger in proportion than the liver of a grown person; that you are very much more likely to elicit dullness in the child; the dullness over normal liver area in this case is very slight; in fact, a tympanitic note is elicited; palpation under the edge of the ribs does not reveal the liver.

For the reasons I have given I believe the tumor to be a congenital malposition of the liver. I have advised an exploratory section.

A YEAR'S SUPPLY OF BABIES.

It will probably startle a good many persons to find, on the authority of a well-known statistician, that, could the infants of a year be ranged in a line, in cradles, the cradles would extend round the globe. The same writer looks at the matter in a more picturesque light. He imagines the babies being carried past a given point in their mother's arms, one by one, and the procession being kept up night and day until the last hour in the twelve months had passed by. A sufficiently liberal rate is allowed, but even in the going past at the rate of twenty a minute, 1,200 an hour, during the entire year, the reviewer at his post would only have seen the sixth part of the infantile host. In other words, the babe that had to be carried when the tramp began would be able to walk when but a mere fraction of its comrades had reached the reviewer's post, and when the year's supply of babies was drawing to a close there would be a rear guard, not of infants, but of romping six-year old boys and girls.—*Medical Counselor.*

EDITORIAL COMMENTS

Uric Acid from a Practical Point of View

Now that "malaria" is coming to be known among the backward members of the profession as a specific disease caused by a parasite which can be located in the blood, a need is felt for some new catch-word with which to mystify ourselves and the public. Judging from the glibness with which the "uric acid diathesis" is now talked of by both doctors and patients, this is apparently the coming disease. It explains numberless strange symptoms, gratifying the sufferer and having withal a comforting, scientific sound, which promises well for its usefulness and permanence. We know of physicians who are constantly making the diagnosis with pride, and who have not even dreamed that the matter needs any verification in the chemical laboratory. For these men it may be well to say that not by any means as much is known of the rôle of uric acid in the animal economy as might be supposed from the extravagant writings of Dr. Haig. It is now disputed whether indeed uric acid is always or even generally an intermediate decomposition product in the formation of urea. The question is *sub judice*, and the advocates of the various theories in respect of its origin are all making claims far in excess of what is logically justified by the meagre facts thus far established.

Before we can draw further conclusions we must have more data, and these data cannot be arrived at except by careful chemical analysis. When we have established by a series of determinations in the twenty-four hours' urine that the quantity of uric acid is permanently diminished, or that an extended period of "suppression" (with symptoms) is followed by a sudden large increase of acid and a relief of the symptoms, we may conclude that a metabolic fault is present; otherwise the diagnosis is pure guess-work,—little short of self-stultifi-

cation. A further practical word is this, that the analysis by Hopkins' latest method is comparatively quick (a few hours) and quite reliable; nor does it require any more complicated apparatus than a burette, a few well-known chemicals, and an ordinary scale. Any doctor can make it after a few days' practice, and make it well. This being the case it is to be hoped that the diagnosis of this at present protean disease (in the minds of the doctors) may be narrowed down to something more rational, and that at the same time the publication of many observations from different quarters may bring more light as to what really constitutes a scientifically proved uric acid diathesis.

B.

**A New Stain for the
Malarial Parasite.**

At the February meeting of the New York Pathological Society Mr. L. B. Goldhorn, one of the workers in the Carnegie Laboratory, described a new method of staining the malarial parasite, which promises some valuable and practical results. The stains as shown under the microscope were of unusual beauty and distinctness in themselves, and the method as described is simple and quick. The bodies of the red cells are red; the nuclei of the leucocytes and the cytoplasm of the parasites are blue; while the "chromatin" or nucleolus of the parasite is stained a deep blue, sometimes almost violet. The essential part of the stain is the methylene blue. This is converted into a "polychrome" condition by a rather elaborate mode of artificial ripening, described in full in Mr. Goldhorn's paper, though rather too long to be given here. [The paper will be shortly published in full.] The prepared stain has been, or shortly will be, put upon the market.

The technique is simple enough.—Blood films made as usual on a slide or cover are fixed in methylic alcohol (Merck's C. P. is the best) for fifteen seconds. After drying in air (best without heat or filter paper,) or washing in tap-water, stain in

$\frac{1}{10}$ of 1 per cent. aqueous eosin (any good kind) for fifteen seconds, and wash. Then apply the methylene blue for forty-five seconds or one minute and wash again. Dry as before and mount. The film should be freshly made to get the best results. This stain not only accentuates the chromatin but also shows in invaded red cells a peculiar granular degeneration which is thought to have been thus far undescribed. In the nucleated reds of anemia and leukemia the same granular condition of the extranuclear part of the red cell is also to be observed with the same method, and the stain is said to be a fine dye for many bacteria also, particularly the gonococcus.

Those of us who have "pottered" fruitlessly for months over the chromatin stain which can be made with certain sorts of methylene blue by the "Romanovsky method," will be in a situation to value fully the ease and beauty of the results to be obtained with Mr. Goldhorn's preparation. We may confidently expect wide expressions of pleasure and approval over this interesting announcement as soon as it becomes better known.

B.

PEDIATRICS is in receipt of a courteous announcement of the next Italian Pediatric Congress, to be held in Florence October 15-20, 1901, "for the progress of science and the advantage of suffering infancy." The fellows of the national society are entitled to take active part in the proceedings and receive a copy of the records without extra charge. All other physicians may attend and participate in the meetings and receive a copy of the records by the payment of a small sum (L. 10). Reduced rates will be granted to all "Congressisti" on Italian railways. The program appears to be one of unusual interest, and to those who know the zeal and high scientific ideals of Italian medical men it is not needful to explain that the congress will be one of importance. The address of the General Secretary, Dr. Luigi Concetti, is Naples.

B.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, October 11. 1900.

THOMAS S. SOUTHWORTH, M.D., Chairman.

A Case of Progressive Muscular Dystrophy.—Dr. SARA WELT-KAKELS presented a boy of six years, suffering from progressive muscular dystrophy. Both parents were living and healthy, and there was no family neuropathic history. He had first begun to walk when 18 months old, but had not been as active as other children of his age, and had stumbled a good deal. Examination showed him to be pale and rachitic and his intellect rather defective. The lower extremities were cold and mottled, and the patellar reflex was diminished on the right side and nearly abolished on the left. While the muscles of the upper extremities were wasted, those of the lower extremities were markedly hypertrophied. The muscles of the face were not affected. The absence of fibrillary twitchings, the early beginning and the muscular hypertrophy were the distinguishing features. The disease affected boys more than girls and often several members of a family. Usually two or three years suffice to cripple these persons completely. The treatment consisted in massage, exercise, electricity, and the internal use of thymus gland.

Dr. CHARLES HERMAN said that he had seen this child a few months ago at the Good Samaritan Dispensary. The manner in which this child rose from the floor was certainly very characteristic, yet he had seen almost the same thing in a child having rickets. It was usually stated that the disease began about the sixth year, but he was of the opinion that it often began two or three years earlier but escaped notice.

An Undiagnosed Meningitis in a Child.—Dr. DAVID BOVAIRD presented some fresh pathological specimens because of the difficulties presented in the diagnosis. The child of four

months from whom they had been taken had been brought to the New York Foundling Hospital on October 3d with a temperature of 102° F. and a rapid pulse and respiration. Physical examination had been made daily but it had been impossible to locate the pneumonic consolidation in the left lower lobe definitely until the day before death. About this time there had been a slight convulsive seizure affecting more particularly the right side. At the autopsy a fibrinous layer coated the lung, and on section through this area no distinct pneumonic consolidation was found. The pericardium was distended with thick fibrinous material, and the anterior three-fourths of the brain as well as the base were covered with a marked exudate. This was especially interesting in view of the absence of cerebral symptoms up to twelve hours before death. He had had no opportunity as yet to make a bacteriological examination.

Dr. CHARLES G. KERLEY said that these specimens reminded him of an autopsy which he had made some years ago. The patient was a colored child with pneumonia and no cerebral symptoms except slight stiffness of the neck shortly before death. An unusually extensive exudate had been found over the brain.

Conclusions Formed After Six Years' Experience with the Antitoxin Treatment of Diphtheria.—Dr. HENRY F. KOESTER, Medical Inspector of the New York Health Department, read a paper with this title. He said that the time had at last arrived when, given a diphtheria early enough in the course, we had in our possession a remedy capable of positively curing the disease. Of the 170 cases from private practice, forming the basis of this paper, only about 3 per cent. were among adults. When called within the first forty-eight to a child with diphtheria he now felt confident in predicting recovery in two or three days if the antitoxin treatment was properly carried out. To obtain the best effects it must be used fearlessly, the dose being never less than 2,000 units. In severe cases 3,000 units should be used, and repeated in from twelve to twenty-four hours. He firmly believed that antitoxin never does any harm, and he would use it in all suspected cases without waiting for the results of the bacteriological examination. It is most important to remember that the dose must

be regulated by the severity and duration of the disease and not by the age of the patient. There might be a few exceptions to this rule, but the rule was safe and a good practical guide. It would be rarely necessary to increase the dose very much for a child over five years. If nasal diphtheria were present he would give from 4,000 to 5,000 units at the first visit. In diphtheritic croup he would use from 4,500 to 6,000 units and be ready to intubate at short notice. If the stenosis recurred it was not due to a return of the diphtheria, but was the result of granulations or of septicemia. In cases of mixed infection or so-called septic diphtheria the initial dose should be from 5,000 to 6,000 units, and this should be repeated in twenty-four hours. In many cases of mild croupy cough, so mild perhaps as to be mistaken for pertussis, a single moderate dose of antitoxin would often accomplish wonders. The injection was best made deeply in the gluteal region. A most valuable use of diphtheria antitoxin was for immunization, particularly in crowded tenements. In former years it was not uncommon for several members of one family to die of diphtheria before the disease could be controlled, now it was of rare occurrence and could be prevented. It was usually stated that the immunizing dose is from 150 to 300 units, but his own practice was to give from 300 to 500 units. He had made use of immunizing doses in 1,800 cases in tenement-house practice and held the method in high esteem. Where the discharge was free and inclined to be foul he advised syringing out the throat every hour or two with a saturated solution of boric acid or preferably with a *neutral* solution of peroxide of hydrogen diluted two or three times. It was most important that an acid peroxide of hydrogen solution should not be used because it excoriates the parts and adds much to the patient's distress. The mouth of the child should be kept open during the douching to prevent the entrance of the fluid into the Eustachian tube. The speaker objected to the use of tincture of the chloride of iron and potassium chlorate as it only tended to derange the stomach. Alcoholics were only indicated in very severe cases. Feeding was most important, and it was necessary to cater to the little one's fancy, hence he had often found ice cream of service in such cases. In intubation cases he did not give anything but water for the first twenty-four hours. After this he gave ice cream, thick gruels or thick condensed

milk. He could recall more than one case in which the children had lived for two or three days on beer and had rejected everything else. Where forced feeding was necessary he preferred the use of the nasal tube to rectal alimentation. He could not too strongly condemn the use of calomel fumigation as it irritates the air passages and invites such complications as pneumonia and bronchitis. One of the dreaded complications of diphtheria was broncho-pneumonia. He believed it could be sometimes prevented if the ingestion for the first twenty-four hours was limited to water. By careful stimulation of the heart by aromatic spirits of ammonia and strychnia, broncho-pneumonia could often be averted. The most frequent sequelæ of antitoxin treatment were urticarial rashes and joint pains. The former is treated by sponging with cold water and vinegar, the latter by rest and the use internally of the salicylates. As to the cause of these rashes, the speaker expressed the belief that they arose from the surcharging of the patient's blood with the hippuric acid and other excrementitious substances found in the horse serum. His conclusions were: (1) Antitoxin is a positive cure for diphtheria when employed early and in sufficient quantity; (2) even when employed too late to produce its specific action it cannot under any circumstances be productive of harm; (3) when used before the invasion of diphtheria antitoxin possesses a positive immunizing power which lasts about thirty days.

What Quantity and Grade of Antitoxin Should be Given in Diphtheria and How Should it be Administered?

—Dr. WILLIAM H. PARK took up this part of the subject because, as he said, for the last six or eight years he had made a special study of the quantity of antitoxin given. After seeing some of the cases treated at the Boston City Hospital with enormous doses he had been encouraged to give these a somewhat extended trial. He had also experimented systematically in the last two months with small doses, the first case receiving 1,000, the second 2,000, the third case 1,000 units and so on, without any regard to the type of the disease. As the antitoxin unit represents the quantity of antitoxin which will neutralize 100 fatal doses in a half-grown guinea-pig, it followed that the dose of 1,000 units was really a pretty large one. It should be remembered in considering the results of these

experiments that the disease during this time had been of a comparatively mild type. Of the 93 cases, 42 received 1,000 units; of this number 16 per cent. died, there having been six intubations. Of the 51 cases receiving 2,000 units 13 per cent. died, there having been in this series also six intubations. There were 10 cases out of the forty-two that developed rashes, and 12 cases in the fifty-one, so that there were no more rashes in the cases receiving the larger doses. He was of the opinion that possibly two or three of the cases might have recovered if larger doses of antitoxin had been used. Apparently the improvement in the local condition was slower in the cases receiving the smaller doses. He concluded that for mild cases from 1,000 to 2,000 units might be given if the case were to be seen again within a few hours. For the severe cases, from 3,000 to 5,000 units should be given, and in the laryngeal cases from 2,000 to 5,000 units, repeating the dose in twelve or fifteen hours if improvement is not observed. A third dose was rarely required. His laboratory work has led him to believe that we could not eliminate the rashes, as many rashes were noted after the use of the globulin containing the antitoxin as where the whole blood was used.

Antitoxin in the Treatment of Diphtheria.—Dr. JOHN H. MCCOLLOM, Resident Physician at the Boston City Hospital, read this paper. He said that from 1885 to 1891 diphtheria was reported to have been the seventh disease in the list as a cause of the mortality rate, whereas in 1898 it was the sixteenth. Again, in 1891 the number of deaths from diphtheria was 817; in 1898 it was only 170. In the London hospitals from 1888 to 1894, with 11,595 cases the death-rate was 30 per cent; in the same hospitals from 1895 to 1898 the percentage was 18 with 20,000 admissions. In children under one year of age the death-rate from diphtheria before the use of antitoxin was 61, and since its use, 38. In the Willard Parker Hospital the death-rate from diphtheria before antitoxin had been given as 30 to 41 per cent. and since its general use as 25 per cent. The death-rate in laryngeal cases of diphtheria before antitoxin ranged from 75 to 87 per cent. The clogging up of the tube with thick, tenacious mucus in such cases was a positive sign that the diphtheritic membrane was spreading into the bronchi and demanded the immediate use of a very

large dose of antitoxin. One of the cases reported in the paper was that of a child, admitted in a desperate condition after having had the disease for three days. This patient had been given 60,000 units of antitoxin in doses of 4,000 each. With the exception of a troublesome urticaria there has been no untoward results and the patient had recovered. There had been no paralysis and the patient had remained well for seven months and had then returned to the hospital with scarlatina. A girl of four years had been admitted with necrotic membrane, foul odor, and great engorgement of the glands. From previous experience a case of this kind would be considered hopeless under the usual doses of antitoxin. This patient had received 48,000 units before the characteristic effect of the antitoxin had been noted. The child had recovered. A trace of albumin had been found in the urine for two days. He had seen so many apparently hopeless cases recover from this enormous dosage that he believed it to be the imperative duty of the physician to make use of them. He had yet to see a patient die of diphtheria to whom antitoxin had been given in the first twenty-four hours of the disease. He considered every attack of diphtheria serious and requiring prompt treatment. Since September 1895, 104 cases of diphtheria had developed in the Boston City Hospital in the line of duty, and not a single one of these had proved fatal. Antitoxin had been used in all. Paralysis had not occurred and the duration of the disease had been less than the average. The urine of 633 cases of diphtheria had been examined at short intervals, In 42.3 per cent. there had been no albumin; 57 per cent. had had the slightest possible trace; 8.2 per cent. had a very slight trace and 5.3 per cent. a slight trace. The variation in the amount of albumin depended upon the the quantity of urine secreted and the course of the disease. The prognostic value of the presence of albumin in the urine varied with the amount found, but was of no great significance. Of the 71 autopsies in no instance was the condition of the kidney such as to have materially contributed to the fatal issue. Paralysis occurred in 15 per cent. of the cases treated with antitoxin, which is no larger than observed in cases treated without antitoxin.

The results of the use of antitoxin in mixed cases of diphtheria and scarlet fever were not so satisfactory as in pure diphtheria but far more successful than any other method, and

markedly reduced the death rate. In Boston, in 1894, when very little antitoxin was used, 3,119 cases of diphtheria had been reported, with 817 deaths, or a mortality of 27 per cent. In 1899, 2,836 cases were reported with 277 deaths, or a mortality of 9.76 per cent.

Dr. W. C. DEMING spoke on the question of dosage, basing his remarks on an experience in the Health Department with 277 cases reported to be diphtheria, and in 479 cases treated with immunizing injections. In ordinary cases seen within the first four or five days he believed the dose of even 1,000 units would probably prevent the advance of the disease, but he preferred to give 2,000 units. In laryngeal cases or in other severe cases he would give 4,000 units. He had known of but a single case develop diphtheria within thirty days after immunization.

Dr. L. K. NEFF said that in severe laryngeal cases and in the septic forms of the tonsillar or pharyngeal type, he used upwards of 7,000 units for a child of ten years. If no improvement were observed in twenty-four hours, from 3,000 to 4,000 units should be given. In an ordinary case of tonsillar diphtheria one dose of 3,000 units would be sufficient to effect a cure.

Dr. JOSEPH E. WINTERS commented upon the very large number of physicians and nurses in the South Department of the Boston City Hospital who had contracted diphtheria. Henoeh had stated in his book that in a period of thirteen years and a half, during which cases of severe diphtheria were almost constantly present, not a single case of diphtheria had developed among the nurses or physicians. This made the showing in the Boston Hospital very remarkable, particularly as he had been assured that these cases were all examples of clinical diphtheria. He was disposed to believe that this explained the very low death-rate in the City of Boston. At one time in the Willard Parker Hospital the mortality had risen to 90 per cent. During July the mortality had been 82 per cent., and this high mortality had coincided with the large doses of antitoxin used. Per contra, the lowest mortality had been observed in the period when the smallest doses had been

in use. He had observed at least on three occasions an increase in the mortality when Dr. Park had increased the doses of antitoxin used. He mentioned these facts largely because of the enormous doses that had just been advocated by Dr. McCollom. An agent which is capable of neutralizing the poison of diphtheria cannot be a harmless agent under all circumstances; that was impossible in his opinion. The practice of giving antitoxin therefore when there is another toxin like scarlatina present seemed to him especially dangerous.

Dr. H. W. BERG said that the success attained by Dr. McCollom with his enormous dosage was the most cogent argument as to the safety of the antitoxin treatment. He had watched personally and with much interest the test made last spring at the Willard Parker Hospital of the large doses of antitoxin. He had been much impressed with the fact that the cases receiving these large doses did not do so well as those treated with smaller ones. He would not speak of the effect on the death-rate because he attached very little importance to the statistics of the hospital owing to the frequent marked fluctuations in the type of the disease to say nothing of other disturbing factors. He had noticed more bronchopneumonia, more erythemata, and more albuminuria during this period of treatment with the large doses. Later on, when the smaller doses had been used, the cases had done better and rashes and albuminuria had been less common. In his private practice he had never used more than 1,000 units at a single dose, though repeating it sometimes two or three times and even with this very moderate dosage he had achieved considerable success. He was opposed to the very large doses, not so much because of the quantity of antitoxin introduced into the system as to the amount of heterogenous serum injected at the same time.

Dr. A. RUPP spoke from the point of view of the general practitioner. He corrected the statement of Dr. Koester, that those who had opposed the claims of antitoxin advocates had not published the quantity and other facts connected with antitoxin dosage. Concerning the statistics offered by Dr. McCollom he said it would be futile to say anything against them because they could be handled profitably only in one's study where comparisons could be carried on with what others had reported. History, it has been said, was a terrible thing, and this even-

ing's papers and the advocates for antitoxin had demonstrated that history had been treating antitoxin claims terribly. Four and six years ago enthusiasts gave only 1,000 or 1,500 units and found that quantity all-sufficient for cases that now are given 3,000, 6,000, and 60,000 units. Dr. Rupp asserted that it was absurd to compare the action of morphine and antitoxin apologetically in favor of the latter remedy. Morphine was known physiologically and chemically, and its specific action could be specifically gauged, which could not be said of antitoxin.

Dr. H. D. CHAPIN said that but little emphasis had been laid in this discussion upon the fact that a large proportion of our cases are examples of mixed infection.

Dr. C. HERMANN said that from 1895 to 1898 he had seen a very large number of cases of diphtheria treated in Vienna and Berlin and it was true the statistics did not seem to be very striking. To offset this, however, was the profound impression made upon those observers who had been connected with such hospitals for many years and had had an opportunity to compare the results of former years with those of the present time. It was generally stated that the protection conferred by an immunizing dose of antitoxin lasts for thirty days, but it has been proved that this period was certainly not over twenty-one days.

Dr. KOESTER said that in 1895 he had had an opportunity to watch a number of very severe cases of diphtheria at West Farms. There were several children sick in one family, and an attempt had been made to study the dosage here. Through a misunderstanding one child had received 12,000 and another 24,000 units. All of the children had recovered, though slowly, and he had been unable to observe any difference from the widely varying doses employed. It seemed to him that rashes are more common now than four years ago. At one time the Board of Health of New York City had had a horse, known as No. 7, who furnished an antitoxin which never gave any rash no matter how large the dose employed. The serum from certain other animals had been known almost uniformly to cause rashes.

Dr. W. H. PARK said that if he had to choose between giving a dose of 1,000 or 5,000 units to all cases he would elect the larger dose. However, he believed that in many cases doses of 1,000 or 2,000 units would suffice.

Dr. McCOLLOM in closing said that before the days of antitoxin the death-rate in Boston City Hospital had been 46 per cent. In the first eighteen months after the South Department had been opened and antitoxin used, the death-rate had been only 12 per cent. Since 1895 the ratio of mortality per 10,000 of the living had gradually diminished from 18 to 5. He did not wish to be understood as saying that these enormous doses of antitoxin were always necessary, but he did wish to advocate their use in the desperate cases.

CONTAGIOUS DISEASES.

In the group of children's diseases—measles, scarlet fever, mumps, chicken pox, and whooping cough—the exact cause of the contagion is still unknown. It is an ignorant philosophy that argues, when one child comes down with some infectious disease, that "as they've got to have it sooner or later, they might as well have it all in a batch and be done with it." It is not the inevitable fate of childhood to have to undergo the constitutional strain of such an interruption in its development. Although some of the diseases may not cause the parents much anxiety at the time, they are chiefly to be feared from their after-effects, and the oculist and aurist know that many of their chronic cases are traced back to measles or scarlet fever, while the nerve specialist finds the nervous system strained to the point of St. Vitus' dance or even epilepsy, from the wrack of these diseases. On account of the lurking dangers in even mild cases, no one should attempt to nurse a child through without at least one visit of advice from a physician, nor should one ever think it smart to smuggle a light case through the board of health.

Complete isolation, a thorough use of disinfectants, avoiding personal contact with anybody, permitting no children to go to school from the house, using no books from a public library, and burning all toys and books that the child has played with—these precautions, if honorably and honestly observed, would stamp contagious diseases out of existence. And if mothers and nurses would join in the spirit of the law, instead of perfunctorily performing or slyly evading it, the diseases of children would be as completely of the past as are yellow fever and cholera, which were once common in New York City.—Dr. JELLIFFE, in *The Puritan*.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, October, 1900.

Concerning Functional Murmurs in Children. By Dr. CARL LOOFT.—Opinions vary considerably as to the occurrence of functional cardiac murmurs in anemic infants under the age of three years. Both Hochsinger, in Germany, and Weill, in France, deny the occurrence of these murmurs. Yet on analysis it will be found that the basis of the opinions of these writers are hypothetical and contradictory statements. The writer studies the question clinically and concludes that (1) functional murmurs occur in infants under the age of three years; (2) the diagnosis of an organic lesion cannot be made solely upon the evidence of a systolic murmur. Other physical signs must be found, namely, the accentuation of the second pulmonary sound, the propagation of the sound, etc. The autopsy may contradict the existence of an organic lesion which was supposed to be present on the evidence of a systolic murmur which was present in early infancy.

Inspection and Palpation of the Precordial Region in Children. By Dr. FERNANDEZ FIGUEIRA.

JAHRBUCH FUER KINDERHEILKUNDE, October, 1900.

1. Hypertrophic Cirrhosis of the Liver. By Dr. C. FOLGER.—The writer reports a case of hypertrophic cirrhosis in a boy aged 3 years. The child had a tumor occupying the entire right side of the abdomen, but no jaundice and scarcely any symptoms of congestion. Slight jaundice developed a few days after admission and became intense. There was also fever, swelling of the knee and thigh, and pain in the lower extremity of the right side. The child died two weeks after admission. The autopsy showed hypertrophic cirrhosis of the liver and a thrombus in the right femoral vein. The case is anomalous, as hypertrophic cirrhosis is usually accompanied from the first by icterus and the sudden intense jaundice as well as the death in a cholemic condition cannot be easily explained. It is probable that the cause of the cholemia was an intoxication the origin of which was difficult to trace. In all probability the toxic substances originated in the intestine, which was found to be the seat of catarrhal inflammation. The size of the liver was remarkable, and the author believes that in this case the liver was larger than in any other case of hypertrophic cirrhosis in children which can be found in literature. The liver of this patient weighed 1750 grams; the stools in this case were of a grayish yellow color and of a fair consistency in spite of the absence of icterus. As a rule the stools are said to be normal in color and consistency in hypertrophic cirrhosis. The etiology of this case, like most others of its kind, was absolutely obscure.

2. **The Relative Proportion of the Different Varieties of Leucocytes in Man in Health.** By Dr. M. CARSTANGEN. (*Concluded*). The different varieties of leucocytes, namely, the polynuclear leucocytes and the lymphocytes differ in each individual under the same circumstances but remain fairly constant in the same individual. All physiologic processes influence the relative number of these structures. This numerical relation is markedly changed in the first days of life and in the first years of childhood.

3. **Concerning Dilatation of the Heart in Childhood.** By Dr. A. NEUMANN. (*Concluded*).

JAHRBUCH FUER KINDERHEILKUNDE, Supplement, October, 1900.

1. **The Influence of Irritation on the Eruption of Varicella.**—The fact that the eruption of chicken pox is more pronounced wherever the skin is subjected to irritation, provided the epidermis be soft, has been noticed by a number of observers. The writer reports two cases of this kind. In the first the eruption was scanty except beneath a bandage which surrounded the chest and covered a wound that resulted from an operation for empyema. In the second there was pneumonia followed by chicken pox. Cold packs were applied to the chest for the pneumonia and when varicella came on it was found that the pustules were most numerous where the cold compresses had been in contact with the skin. In measles and scarlatina the intensity of the eruption is not so dependent upon skin irritation as in chicken pox and smallpox. A third case is related to illustrate this point. As a rule an affection of the lungs or of the digestive tract will be found present in cases of measles which begin with prominent prodromal symptoms but in which the eruption is scanty. In the case reported here it was found that a chronic eczema had disappeared when the patient recovered from an attack of measles.

2. **The Amount of Indican and Urobilin in the Urine in Cases of So-called School—Anemia.** By Professor von Starck.—In these cases there is usually catarrhal colitis due to the irregular evacuations which are usual in school children. The anemia is a symptom or a result of the chronic colitis. An increased amount of indican is found in the urine. The amount of urobilin, however, does not correspond to the quantity of indican. The treatment of these cases consists in attention to the condition of the bowels.

3. **The Bacteriology of Gastroenteritis in Nurslings with Special Reference to Streptococci.** By Dr. J. J. Pigaud.—The writer examined a series of thirty-two cases with the intention of investigating the intestinal flora in gastroenteritis in nurslings. He found that the bacillus coli was present in all cases. The writer does not agree with Escherich concerning the differentiation of the red and blue colon and does not think that staining with Gram's or with Weigert's method is a trustworthy test. Of the 32 cases 11 recovered. In these, cocci were found in 5, proteolytes in 3,

cocci and proteolytes in 2, and pyocyanus in 1. Of the 21 cases that ended fatally, 8 had cocci, 6 had cocci and proteolytes, 3 had proteolytes, 2 had cocci, proteolytes and proteus, and 2 had cocci and proteus.

4. Concerning *Pneumococcus-Grip* in Children. By Dr. ANGELO LUZATO.

5. Concerning the Occurrence of the *Proteus Vulgaris* in the Stools of Nurslings, and an Attempt at Treatment by the Administration of Bacterial Cultures. By Dr. J. BRUDNITSKI.—The writer examined all the stools that had a bad odor and a hard, compact consistency. He found that the *proteus vulgaris* was present in the great majority. Cultures prepared on agar, in Petri dishes, or on gelatin in tubes gave a characteristic odor of proteus after twenty-four hours. In addition, the writer fed animals with cultures of proteus and found that the stools of these animals contained no *proteus vulgaris* before such feeding but that after the cultures had been given the germ was present in their feces. The results of feeding were negative with the exception of slight diarrhea in cats. Another experiment consisted in feeding the patients with cultures of a non pathogenic germ in order to destroy the pathogenic organism which caused the diarrhea. For this purpose the *B. lactis aerogenes* was chosen, and 10 cc. of sterile milk inoculated with a pure culture of this germ. The culture was then incubated at the usual temperature for twenty-four hours and given to the patient before his regular feeding. The reason for choosing the *b. lactis* was that this germ is particularly suited for overcoming germs of the proteus class. Thus, Baginsky inoculated a beef peptone gelatin culture medium to which lactic acid had been added with *b. lactis aerogenes* and with his own white proteolyte, with the result that the former destroyed the latter by the formation of lactic acid from lactose. Escherich also suggested the administration of lactose or even of cultures of acid forming germs in order to combat the alkaline fermentation which results in the decomposition of proteids. The writer records 18 cases; of these, 8 had fetid stools, and of the latter 7 had proteus in the feces. In addition, he reports 5 cases in which proteus was found by Escherich. In the 10 cases without foul odor 8 had no proteus, and 2 showed the presence of a proteolytic bacillus which could not be identified with *proteus vulgaris* (Spiegelberg's proteolytes.)

6. Mortality Among Hereditary Syphilitic Nurslings. By Dr. WALTHER FREUND.—After a very careful study of this question in the light of statistical data, the writer concludes that hereditary syphilis as such does not seem to have a definite effect on the probability of survival in infants. The mortality of syphilitic babies will always be greater than that of normal infants, because there are so many prematurely born and weak children. He does not deny Hochsinger's statement, that a certain number of hereditary syphilitics will not thrive no matter what form of feeding is given, but he also knows that in non-syphilitic children this is equally true.

7. **Concerning Acute Gastroenteritis in Weaned Children and in Older Children.** By Dr. CESARE CATTANEO.—The subject indicated in the title has been neglected by pediatricists. While these cases are analogous to gastroenteric infection in infants, they present several differences. The course is less acute, and as a rule milder. There are no choleraic phenomena usually, and the complications are few and rare. Vomiting and diarrhea are not the most prominent symptoms and the irritative and toxic symptoms take the center of the stage. Examination of the stools in five cases showed that generally the bacillus coli and a proteolytic bacillus are present in the feces of such children. These germs, it is true, are found in normal stools but inoculation experiments showed that in the cases examined they were particularly virulent. Blood cultures from two patients in this group were absolutely negative. Clinically the writer distinguishes two forms of the affection in older children: (1) The mild form, lasting one or two days, sometimes without fever; The chief symptoms are anorexia, headache and nausea, followed by vomiting; as a rule there is constipation at first then sometimes a mild diarrhea. (2) The pyretic form—the chief symptoms are fever, with its accompanying phenomena, and constipation.

The tongue is coated; the breath has a sour odor; the pharynx is red; there is mild meteorism; the urine is scanty, sometimes anuria for the first twenty-four hours; it contains no albumin but an excess of urates. The temperature falls to normal on the second or fourth day, sometimes it lasts five days with morning remissions. In some cases there is irregular fever, anorexia, and a general appearance of toxic state for twelve days or two weeks. Relapses easily occur after the administration of solid food at a too early date. (3) In the worst case the choleric form predominates. The writer has never seen a case of this kind, for it is very rare in older children, but Comby has described the clinical features of such cases. The treatment of the ordinary cases consists in regulating the diet and in eliminating the germs from the intestine. Fasting and liquid diet form an essential part of the therapy. In order to empty the stomach lavage may be used if it is deemed necessary, especially in choleraic cases. The procedure is difficult to execute in older children, and sometimes we must content ourselves with an emetic, as recommended by Comby. An alkaline solution should be used if lavage is resorted. The bowels are best emptied by enemas and by the administration of calomel in repeated doses. Injections of cold fluid are indicated after the bowels are emptied if high fever continues, and lukewarm irrigations may be used if the fever has abated. Benzonalphthol with magnesia may be used in addition as a disinfectant. The use of astringents is not necessary as a rule. In the choleraic form hypodermoclysis and stimulants are indicated. Antipyretics are not necessary in the pyretic form, but if the fever is continuous and there are cerebral disturbances cold baths or cold packs may be advantageously employed. After the first twenty-four hours the diet may consist of milk, if it can be borne; if not, broth with small quantities of alcohol may be given. Soups, eggs, soft meat, etc., should not be given until convalescence sets in.

8. **Concerning the Diastatic Ferment in Mother's Milk.** By Dr. ERNST MORO. The writer found as the result of a previous investigation (*Fahr-*

buch f. Kinderheilk, N.F., xlvii, 4) that woman's milk contains a diastatic ferment which was capable of converting one quarter of an equivalent quantity of starch mixture. The aforesaid investigation did not include the determination of the nature of this new enzyme nor of the products of fermentation. This he has done in part in the present study. The substance which he isolated was a white powder, constituting $\frac{1}{200}$ of the total weight of the milk used in obtaining it, slightly soluble in water after the addition of a few drops of alkali. The isolated substance consisted chiefly of casein and albumin and contained the diastatic ferment. The products of fermentation were found to be chiefly dextrins and a small quantity of maltose. Whether the ferment has any physiologic significance has not been determined. The origin of the ferment is also doubtful. It is a product of the gland cells or does it come from the blood? The writer is inclined to believe that the ferment is a peculiar constituent or the casein of woman's milk.

9. Concerning Enteritis due to Staphylococci in Breast-fed Infants. By Dr. ERNST MORO.—The writer calls attention to the frequency with which staphylococci are found in woman's milk. According to Cohn and Neumann if the nipple be properly cleaned and disinfected the milk of a healthy woman is absolutely sterile. The writer, however, found that in wet nurses staphylococci were present in the milk constantly even after the most careful cleansing and disinfection of the nipple (soap, alcohol, ether, lysol, bichlorid). The germs found in these cases are staphylococci usually the staphylococcus albus, occasionally the aureus. In addition the author found the *b. acidophiles* regularly in woman's milk and not rarely *sarcinæ* and *oidium albicans* were also present. The presence of staphylococci in woman's milk is explained by the fact that these germs are parasites in the skin of the nipples; they do not alter the milk, for they do not penetrate into the breast; they adhere to the walls of the milk ducts and are expelled mechanically. The fact that enteritis in nurslings is due to staphylococci, and the fact that other germs are responsible for enteritis in artificially-fed infants, together with the conditions above detailed, seem to point to the theory that staphylococci are the etiologic factors in the gastroenteritis of breast-fed children. As this disease is benign the writer induced it experimentally in a child aged 42 days, with complete success. The staphylococci were found in the stools of the baby. The first portion of milk should be removed before a baby is allowed to suckle, and the nipple is to be kept clean with care in order to prevent this trouble.

10. Experiments on the Metabolic Use of the Casein of Cow's Milk. By Dr. WILHELM KNOEFFELMACHER.

11. Lymphemic Anemia. By Dr. GEISLER and Dr. JAPHA.—Report of a case in which there were a number of features that rendered the diagnosis doubtful between leukemia and pernicious anemia.

12. Contribution to the Study of Benign Geographica. By Dr. SIEGFRIED CAROW.

13. Treatment of Rickets with Suprarenal Extract. By Dr. EUGEN NETER.—In twenty-eight cases rachitol (suprarenal extract) seemed to have no influence on rickets. No favorable results were noted as regards improvement of deformities, craniotabes, etc.

PEDIATRIA, October, 1900.

1. A Comparative Study of the Protective Function of the Liver in Young and Adult Animals. By Dr. GIUSEPPE ANTONIO PETRONE.—Read at the Paris Congress. For abstract see *Revue Mensuelle des Maladies de l'Enfance*, August-September, 1900, in this department of PEDIATRICS.

2. Concerning the Diagnostic Value of Babinski's Reflex in Children. By Dr. ALBERO MUGGIA.—In 1896 Babinski communicated to the Paris Society of Biology the fact that in organic paralyses of the lower limbs a slight stimulus to the skin of the sole of the foot produces extension of the toes, especially of the great toe. A study of Babinski's phenomenon in a number of cases enabled the writer to formulate the following conclusions: Babinski's sign cannot have a pathologic significance in newly-born infants or in nurslings under the age of six months. Even after this age limit this sign may be found in children with rickets who have no nervous lesions. It may be regarded as a useful sign in some cases, serving to distinguish meningitis from infectious conditions with meningeal symptoms. In hemiplegias its constant presence helps to distinguish paralysis from polyneuritis or poliomyelitis, and organic from hysterical hemiplegia. The faintness of this sign in cerebellar tumors, its rarity in hip disease and in amyotrophic paralysis may serve to distinguish these conditions from others which have similar symptoms.

Therefore Babinski's phenomenon, although not yet well understood, deserves to be admitted into the semeiology of infantile affections. The mere presence or absence of this sign, however, should not be too greatly estimated, for it must be remembered that it varies greatly, according to the peculiarities of the individual tested.

3. A Case of Primary Diphtheritic Laryngitis with Extension into the Bronchi. By Dr. EUGENIO MODIGLIANO.—In this case three injections of antitoxin were given, without apparent benefit, at short intervals. But the next injection proved more successful and the patient recovered in four days, the whole case lasting eleven days. The stenosis was treated by counterirritants to the neck (croton oil, iodine, etc.), and by inhalations of alkalies and balsamics. Nothing is mentioned about intubation, but the author was ready to perform tracheotomy if necessary.

KINDERARZT, November, 1900.

Report of the Proceedings of the Section on Diseases of Children and

School Hygiene of the Seventy-second Meeting of German Naturalists and Physicians, in Aix-la Chapelle, September 16-22, 1900. By Dr. SELTER.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, November, 1900.

1. Report of an Autopsy in a Case of Congenital Dislocation of the Hip Operated upon According to Lorenz's Method. By Dr. NOVE JOSSERAND.—The case reported in this article was published because it is, so far the author knows, the first instance where an autopsy was performed after Lorenz's operation, and because just at present there is a great deal of discussion as to the value of the various methods of treatment in congenital dislocation of the hip. The patient was a girl aged three and a half years. No history of acute disease nor of traumatism was obtained. At the age of two years she was weaned and began to walk, presenting the peculiarities of the deformity which was discovered later. On examination a slightly exaggerated lumbar lordosis was found, and the child seemed to walk well, except that she limped with the right foot. On inspection there was a slight atrophy of the right limb, which was found to be $\frac{1}{2}$ cm. shorter than its fellow. The thigh seemed shorter, and the great trochanter was more prominent and placed higher in relation to the anterior superior spine. On palpation the head of the femur was not found in its place in the acetabulum but could be felt in the iliac fossa when the thigh was slightly flexed and adducted. The movements were free. The diagnosis of congenital dislocation of the hip was confirmed by the Roentgen-rays. Lorenz's operation was performed without much difficulty and the displaced head of the femur was reduced into its normal place. The limb was encased in plaster of Paris which reached to the knee and held the thigh in abduction at right angles. Two months later the apparatus was removed and a new plaster of Paris dressing applied under anesthesia, this time in a position of abduction at forty-five degrees. The bandage was continued down to the foot in order to maintain the limb in internal rotation as far as it would yield. The head was found in its normal position behind the femoral vessels. The plaster of Paris dressing was renewed at intervals of about three months after this, the abduction being gradually diminished. A year after the operation the plaster of Paris was finally removed and a leather splint was worn in its place so as to keep the trochanter fixed. The child walked well, without any limp; the shortening had completely disappeared and the head of the femur could be easily felt in the proper place. The girl died of diphtheria in the medical ward of the Charité, three months after complete cure from the dislocation.

(To be continued.)

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ORIGINAL ARTICLES

TWO STARVATIONS.

By J. C. O'DAY, M.D.,
Montpelier, Ind.

BY the term "Two Starvations" the writer desires to speak only of the two varieties most frequently met with in general practice, i.e., rickets or fat starvation, and scorbutus or anti-scorbutic starvation. We shall first consider rickets. Few if any of the text-books speak of rickets as being due to fat starvation alone, nor do I wish to be understood as taking issue with any of the eminent writers upon this subject. What I wish to bring out, however, is the fact that rickets invariably is associated with either a total deprivation of fatty elements on the part of the patient, or a deprivation of the kind of fat the peculiarities of the child's metabolism demand. It is an interesting fact and one that throws light upon the dietetic cause of rachitis that it does not occur in Japan. Physicians who have had abundant opportunities to observe the disease of the Japanese state that they have never seen or heard of a case among them. M. Remy, in his "Notes Medicales sur le Japon," says that the Japanese women have a remarkable abundance of milk, and that they suckle their young until the age of five or six years, but their children are also given artificial food after the first year.

Remy's explanation of the immunity of the Japanese from rachitis is as follows: "The Japanese have always eaten plen-

tifully of the fats and oils of fishes, the blubber of the whale, the eel and loach especially. . . . The universal use of the food under notice from the time of ancient Buddhist flesh prohibition, but especially the consumption of fish by the lactating women, together with the fish given to the children as supplementary feeding, which at that time is allowed them by Japanese tradition are, in my opinion, main causes of the non-existence of rachitis in Japan."*

That the great importance of an early diagnosis in this disease be fully appreciated; before discussing its symptomatology allow me to quote one of my teachers, Prof. John Lincoln Porter, of Chicago. Dr. Porter, in speaking of the importance of an early diagnosis in rickets, said in part:

"When we consider that this class of cases show most excellent results and a very low mortality when treatment is begun early we cannot help but assume that many of the cases of deformity and misery might have been saved a large part of their burden of suffering, and made more useful members of society, had the correct diagnosis been made and intelligent treatment begun at the onset of the trouble. As these errors in diagnosis are more apt to occur early in the disease, before deformity and the later classical symptoms have developed, we must bear in mind those indications which are first to appear and often pass unnoticed."

Assuming our familiarity with the general and classical symptoms of rachitis, we will consider those early manifestations which are of such vital importance to the future happiness of the individual, and upon which much can be done toward correcting a condition so full of harm when improperly understood. In the child or infant who is developing rachitis the first symptoms to attract attention are digestive disturbance, such as intestinal catarrh, flatulence, unhealthy stools, and poor and capricious appetite.†

The rachitic baby is a good baby if left alone, but attempts to amuse or fondle it cause the little sufferer to cry out in the dread of being disturbed. While sleeping it is restless and jerky, the head and neck are bathed in a profuse perspiration, sweating is usually pronounced during sleep, it not being

* Smith's "Diseases of Children," p. 160.

† Smith's "Diseases of Children," p. 177.

unusual to find the pillow wet enough to wring water from after a few hours. The extremities are dry and crisp, tender to an extent sufficient to make the bed-clothing a painful burden, causing the nurse or mother no little trouble in keeping it covered during a cold night. There is a marked tenderness over the body, especially over periosteal regions. This tenderness, to my mind, accounts for the little one's desire to be let alone.

"A bruit-de-souffle of greater or less intensity, synchronous with the pulse, has frequently been heard in rachitic cases by applying the ear or stethoscope over the anterior fontanelle."* Delayed dentition, disinclination on the part of the fontanelles to close at the proper time, changes manifested in the bones, peculiar shape of the head and the rachitic rosary of the costal cartilage are all classical symptoms which I will not refer to in this paper, as it is our object to try and recognize the disease long before these symptoms appear. Rickets comes on very insidiously. Its earlier symptoms are not characteristic so that it is difficult to fix the precise time of the beginning. They are usually connected with the digestive apparatus, irregularity of the bowels, frequent diarrhea, acid eructations, and vomiting, tympanites, etc. The child is restless, pale, and sickly; it often shows unmistakable signs of wasting and cries when its limbs are firmly grasped or when it is raised by putting the hands under the armpits. Bronchial catarrh is a frequent complication; febrile symptoms may set in, as restlessness and heat of skin toward evening and through the night, subsiding towards morning with an outbreak of perspiration.

Even without such signs of fever the child is often bathed in perspiration, especially about the head and upper part of the chest. "The earliest stage of rickets is characterized by no pathognomonic signs and may readily escape recognition. The only symptoms are those of imperfect nutrition. The appetite is good, but the child does not seem to thrive. It is a little peevish and out of sorts and the usual means resorted to by the mother or nurse to restore good nature are unavailing. It is most contented when left alone and resents any playful overture, especially objecting to being tossed in the air or

* Smith's "Diseases of Children."

trotted upon the knee, sports which perhaps occasion delight at an earlier period of its existence." *

Guerin, in observing 346 cases of rickets, formed the following table:

Before birth.....	3
During the first year of life.....	98
" second " "	176
" third " "	35
" fourth " "	19
" fifth " "	10
" sixth to the twelfth year.....	5

Of this number 148 were boys and 198 were girls.

From the foregoing it is obvious that the earliest manifestations of rachitis are obscure and recognized only, if at all, with difficulty. We, however, must not be unmindful of the fact that disturbance of the digestive system together with the faulty assimilation are strongly suggestive of oncoming rickets and merit attention.

Before discussing the treatment of rachitis permit me to pass on to the consideration of scorbutus or the anti-scorbutic starvation. The etiology of this disease is well known to be dietetic. Smith claims that in infants the disease is caused in precisely the same way as it is in adults. In short, the disease is caused by either a total or a partial insufficiency of the anti-scorbutic element, the severity of the disease depending upon the amount of the element lacking.

What is the anti-scorbutic element? This we cannot say, except that we know it is always associated with certain of the food stuffs, and, further, we know that when an individual is deprived of such food as contains this element scorbutus is bound to follow.

As the primary object of this paper is to deal with this disease as found in early life, the writer will confine himself to the conditions presented in the infantile type of the disease, omitting altogether the symptoms of adult-scurvy. Glancing over the literature of infantile scorbutus one is astonished to find the great frequency in which it is found by those who care to look for it.

The occurrence of scurvy among infants is a fact too well

* Reference Hand-Book of Medical Science; vol. xvi., p. 226.

established to require argument or demonstration. It is no doubt increasing in frequency, but there can be no doubt also that cases have passed unrecognized before the frequency of its occurrence had been demonstrated. While the disease in infants presents the general character seen in scorbutus of adults it differs decidedly in many of its clinical manifestations. This the writer has recently had opportunity to demonstrate in Randall's Island Hospital, of New York, where adult and infantile scorbutus were present at the same time. Mild cases are very often so obscure that some doubt may arise as to a positive diagnosis. However, it is well to bear in mind that that cure is so easy and treatment so rational and simple, that no suspicious case should even be allowed to go on to the stage of classical and characteristic symptoms. Writers on the subject hold that all lesions of scurvy are hemorrhagic in character, due perhaps to diapedesis. The most characteristic lesions are subperiosteal hemorrhage, chiefly of the long bones, the femur being the one usually affected; also a tendency to separation of its epiphyses. The hemorrhage may occur from mucous surfaces. The symptoms of scorbutus may be divided into two groups; first, pain on motion, painful swelling of the lower extremities, spongy and bleeding gums; second, subcutaneous hemorrhage, pseudo-paralysis, hemorrhage from the cavities of the body. Painful swelling of the lower extremities is one of the most characteristic and constant symptoms; the upper extremities are rarely involved. The thigh is affected more frequently than any other region. In contra-distinction to rheumatism the swelling is above and not at the knee-joint; the skin over the swollen area is as a rule tense and shiny. Liability to fracture at the epiphysis is a marked feature."*

The condition of the gums is characteristic. The gums are purplish in color, soft and spongy, bleed easily and may ulcerate, yet these conditions do not arise if the teeth have not been erupted.

To summarize the clinical characteristics of the disease, Dr. Crandall,* in his excellent thesis on the subject, concludes that children suffering from scorbutus commonly present the following symptoms: anemia, intense pain on motion, spongy and bleeding gums, swelling of the lower extremities usually

* Dr. Floyd M. Crandall, in "Archives of Pediatrics," 1897, p. 523.

at the thigh. There may also be purpura or ecchymosis, discharge of blood from the various cavities of the body and pseudo-paralysis.

In our diagnosis we are to differentiate from rheumatism, stomatitis, rickets, sarcoma, osteitis, and infantile paralysis.

Dr. E. F. Brush, of Mount Vernon, N.Y., in 1892, read before the American Medical Association, at Detroit, Mich., a paper entitled "The Relation of Food to Scorbutus in Children." In part, Dr. Brush concluded as follows: "Every living creature requires for his proper nourishment some raw, living food. Every young living creature needs living food. The mammalia all take it direct from the living fountain, and young feathered tribes are supplied by their parents with living creatures for food. Even the young fishes consume living animalcula, and man seems to be the only one of God's creatures who thinks he knows better. The artificially-fed infant gets its food from the knowing chemist, or must, according to prevailing fashion, have all life sterilized out of it, if it gets any as nature supplies it without the intervention of the chemist. I am positive that there is more in organism and the vitality that holds it together than is dreamed of in our advanced chemical knowledge."

From these few facts which my limited time has permitted of gathering, my paper would be very incomplete were I to touch on the treatment of these two maladies without first calling attention to a few of the important factors which affect the baby of to-day and expose it to the great liability of these two starvations.

It is a fact, which none dare dispute, that rickets and scorbutus are diseases common to the artificially fed baby; and from this we as physicians must not, under any circumstances, consent to artificial feeding which is unnecessary.

The markets of this great age are filled to overflowing with this, that, and the other, preparation of "infants' food," all "perfect substitutes for mother's milk."

Those of us who are established in the larger towns are constantly receiving men who load us down with samples and eloquence in praise of their particular preparation, and unless we are judicious the chances are promiscuous prescribing will be indulged in. Now why not use a little good common sense in the matter? We should to say the least be logical. That

rickets is due to fat starvation is apparent. My limited experience shows it to be the cause in every case I have observed. Dr. Christopher, of Chicago, tells me that 90 per cent. of all the cases observed by him were due to fat starvation alone.

We should regard every food preparation just as we would regard a new surgical appliance, viz., will it do all its maker claims for it? If so, how? Are the popular infants' foods perfect substitutes for mother's milk? Analyze them and we find them to be mainly maltose—simply a sugar. How about malted milk? Malted milk is an excellent preparation, but it is a dry, powdered preparation, and as it is utterly impossible to dry and powder fat it necessarily holds that this preparation is lacking in the fatty elements. Is condensed milk a proper food? Not at all. Condensed milk has been by heat deprived of its antiscorbutic properties, hence it cannot be regarded as a proper food. Let us now consider cooked milks. What are they:—

1. Pasteurized milk, which has been heated to 160° F.
2. Sterilized milk, which has been heated to 212° F.
3. Boiled milk, which has been subjected to evaporation at a temperature of 212° F.

Pasteurized milk is a useless preparation, to my mind, and will not be considered in this category. Sterilized milk is a much finer preparation, yet in both the sterilized and boiled milks the process of heat has removed the anti-scorbutic properties; also the lacto-albumen which appears as a coagulum on the top of the fluid.

In passing, let me say that when the lacto-albumen has been removed we take away the source of trouble to the gouty baby, but as the anti-scorbutic element also has been destroyed neither the boiled or sterilized milks alone should be given to the gouty child. In condensed milk the process of heat has been carried on so long that the lacto-albumen passes from the child undigested, therefore condensed milk is the best milk preparation for the gouty infant; but in using it we must bear in mind its lack of the anti-scorbutic element.

When artificial feeding is necessary and the baby is free from a gouty diathesis, fresh, raw milk from a healthy cow, properly diluted according to the age of the child, is, beyond all doubt, the ideal food. The following table shows the rela-

tive difference of human and cow's milk, from Halliburton's "Essentials of Chemical Physiology":

<i>Woman.</i>				<i>Cow.</i>			
Proteid.	Fat.	Sugar.	Salts.	Proteid.	Fat.	Sugar.	Salts.
2.7	3.5	5.0	0.2	4.2	3.8	3.8	0.7

The treatment of rickets and scorbutus is so simple that it needs only a few words to consider it. Cod-liver oil stands preëminent as a remedy in this disease. A child in which developing rickets is suspected should be given from 15 drops to 1 drachm of the pure oil three times a day. In those cases that do not take the oil kindly some other form of fat is indicated. Next in potency to the oil is bacon fat, and this should not be fried to a crisp, but heated just sufficiently to render it sterile. Butter and cream also can be given with good effect.

Anything supplying the anti-scorbutic element to the scurvy child, is all that need be done, as the disease will under proper treatment disappear. Fresh, raw milk contains the anti-scorbutic element in about quantity sufficient to maintain the equilibrium, but we cannot rely upon it wholly where the disease has already begun to show itself. Fruits contain the anti-scorbutic element in abundance, the orange especially. In orange juice we have a specific for the disease. To the scorbutic child, then, the juice of this fruit should be given freely.

Notwithstanding the fact that rickets and scorbutus yield most admirably to proper treatment, we must not be indifferent to the prophylaxis of these two maladies. Personally and from a limited observation I fully believe that fresh, raw milk properly diluted is the best food we can possibly secure for the infant who has to be artificially fed; first, because it is a living food; second, because it supplies fat; third, because it contains the anti-scorbutic element.

Any of the other food preparations which I have had occasion to refer to, including the cooked milks, may be used, but in using them we must bear in mind the element lacking and by backing up the preparation selected with the lacking elements little or no trouble need be expected.

We must not forget in connection with rickets that fat babies are not by any means immune from the disease, and

when it does occur the indications for treatment are precisely the same.

A word as to the persistence of rickets in those cases where fat has been employed. Where a diagnosis of rickets has been made and some one of the fats mentioned has been employed without apparent benefit the indication is to change the kind of fat. Dr. Christopher lays special stress on this point and claims that so soon as the kind of fat the peculiarities of the child's metabolism demand is supplied the results are most satisfactory.

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BURNS OF THE EYELIDS.

These should be treated by exclusion of air. Carron oil (equal parts of linseed oil and limewater) is a valuable combination, and the lids should be kept moistened by strips of lint that have been steeped in it. In order to hinder the union of the raw surfaces of the eyeball and the lid and to prevent the resultant deformity, numerous devices, such as plates of metal, glass and ivory, have been inserted into the cul-de-sac between the lid and the globe. Unfortunately, however, no measures taken during the healing process can prevent these adhesions if the degree of the burn is sufficient to bring it about, as all these devices are slowly pushed out by the steadily progressive healing from below. Some good may follow the repeated drawing away of the lid from the eyeball and the breaking up of the adhesions with a probe several times a day. Beyond these simple measures, however, nothing can be done.—*Therapeutic Gazette.*

INHERITANCE OF A GOUTY OR URIC ACID TOXEMIA IN CHILDREN, WITH STATISTICS OF FIFTY-SEVEN CASES.

By CARL N. BRANDT, M.D.,
Resident Physician,
Hot Springs, Va.

THE subject of inheritance is given to so much theory and subject also to the errors so often induced by conclusions reached by means of statistics, that I shall not wonder if any reader of these few notes does not take them "*cum grano salis*." Still, although the conclusions reached may be mistaken, the facts are gathered from clinical experience.

The notable increase in the number of cases of gout, so called, or uric acid poisoning, in the country has given rise to much comment and amusement on the part of many of the profession, as well as the laity. We hear on all sides from careless observers that the present fashionable disease is gout. Those among the profession who are called upon to treat the better classes are said to have become faddists upon the subject of uric acid. The explanation, it seems to me, is easily reached. It is noticeable that the greatest number of cases in which such diagnoses are made emanate from the profession in the larger cities or centers—and why? The larger cities and centers present, in the first place, greater numbers of people following a life most likely to produce such conditions and also present greater and more perfect conditions for their development, sedentary life, improper hygienic surroundings, coupled with the ability to procure and consume greater amounts of the food stuffs. Such, when not associated with thorough oridization by means of great physical exertion and an out-door life, are productive of those constituents, which, by their retention in the human economy, are productive of uric acid toxemia, or so-called gout.

A second reason why such diagnoses are more frequently made in large centers is that the physician here has those facilities ever present in the thoroughly equipped and scientifically conducted laboratories which enable him to make a clinical diagnosis. He does not have to guess as to not only the presence but the amount of uric acid present in any given case;

and further, as he applies his treatment he knows from day to day the effect of said treatment upon the cause for which he is applying it.

In other words, had the physician in smaller communities the same facilities, I am sure we would find him joining the ranks of the uric acid faddists. It has been shown by all observers of those conditions in which the clinical cause is thought to be uric acid retention, that, if this retention is not the primary cause, it at least is a clinical fact ever present, and that by bringing about its proper elimination the effects, such as so-called gout, rheumatism, nervous prostration, catarrhal conditions, varieties of sore throat, eye manifestations, and even dental troubles are improved or removed.

Haig has gone even further and shown that by feeding many of these conditions can be brought about.

The one great stumbling-block has been to try and account for the susceptibility or tendency to the production of these conditions in some people and their almost entire absence in others. Much of it may, I think, be laid at the door of personal drug susceptibility. We know that the introduction of a drug into the blood of one person will bring about a rapid manifestation of its physiological action, while in another it will be very tardy or almost absent. We are told that uric acid is insoluble, or so slightly soluble when introduced into the system that when taken medicinally it is void of physiological effect. But can we be quite sure that in the great human crucible of ours it exists in exactly the same form as that in which we find it by an analysis of the excretions? Is it not possible that there may be a reabsorption of this product of metabolism in whatever form it may exist (uric acid, urate of soda, or bi-urate of soda) when retained in the system, giving rise to symptoms which are only due to its physiological action. We know of its mechanical effects when deposited in the tissues.

What I wish to call attention to is the apparent inheritance in children of a tendency to the retention of uric acid. We have in the appended tables 57 cases of diverse manifestations of the retention of uric acid; the noticeable points being, first, that in all the cases an age had not yet been reached when it is probable the case could have acquired gout or uric acid toxemia; secondly, that in each case either one or both parents gave histories of uric acid poisoning; thirdly, that the

cases in which there was a paternal history were just 100 per cent. greater than those with a maternal history. The individual histories of the children showed that so long as they were properly fed and given plenty of physical exercise, so long they remained well, but the moment any indiscretion in diet, etc., was allowed they developed a condition in which uric acid retention could be demonstrated and which yielded promptly when the normal uric acid excretion was again established.

No. cases.	Age. Years.	Manifestation.	No. cases.	Results.			
				Cured.	Impr'v ment.	No imp't.	Under treat.
1	2	Exema.....	20	17	2	1	
8	6	Indigestion.....	6	6			
4	7	Urticaria.....	3	3			
13	10	Pharyngitis.....	4	3	1		
12	12	Tonsillitis.....	3	3			
4	13	Joint-inflammation.....	8	7			1
5	14	Nasal catarrh.....	4	2	1	1	
3	15	Asthma... ..	2	2			
8	16	Conjunctivitis.....	1	1			
		Dental caries.....	6	5		1	
57 cases.		Total.....	57	4	4	3	1

Fifty-seven cases of different diagnosis in the offspring of gouty parents in which uric acid retention was demonstrated as a primary cause.

Of these 57 cases both parents gave history of gout or uric acid toxemia in 24 cases, parental gouty history in 22 cases, and maternal gouty history in 11 cases. Two cases were brother and sister.

One swallow does not make a summer, nor perhaps do 57 cases prove the existence of an inherited tendency to uric acid toxemia, but they do prove to my mind the need of a most careful examination of uric acid excretion in all cases, no matter what the acute symptoms may point to, in the offspring of those having a so-called gouty history. By a careful examination, I mean a frequent quantitative analysis of the urine, made by a competent man. I submit these clinical facts as to the importance to be placed upon uric acid retention as a causative factor in disease, as observed by me, for what they are worth, not even claiming the correctness of my deductions, but merely as the observations of one most interested in reaching the truth.

SOME PULMONARY AFFECTIONS OF CHILDREN FOLLOWING THE INFECTIOUS DISEASES.

By ALBERT M. COLE, M.D.,
Indianapolis, Ind.

IN the study and practice of pediatrics the infectious diseases assume an importance which is only justly commensurate with their frequency and oftentimes serious nature. Every child must run the gauntlet of these diseases; they constitute seven tenths of the acute ailments in children before the twelfth year, and therefore their recognition, differential diagnosis and treatment must always remain a most important branch of the general practitioner's knowledge. While the grave nature of some of these infections, as diphtheria and scarlet fever, are recognized by both physicians and laity, on the other hand several of them, particularly measles and pertussis, are not accorded the serious consideration that their gravity demands.

Statistics show that in England during the last five years measles has caused three deaths for every one caused by scarlet fever. Only one infectious disease has been more destructive of life and that is whooping cough. We also find that measles carries off annually more than four times as many persons as enteric fever. As specific causes of death in childhood, measles and pertussis are given, by some authorities, second and third rank respectively.

Thus, while these two diseases must be given an important place in the vital statistics of childhood, their danger, as is well known, lies not so much in the diseases themselves as in their complications, of which by far the most frequent and most serious are simple and tuberculous bronchopneumonia; so frequent are they, so insidious in their beginning often, so serious and protracted in their course and so fatal in their termination that they are responsible for fully three fourths of the deaths in measles and pertussis and must be considered among the most dreaded diseases of childhood. Moreover, these two pulmonary afflictions not only complicate measles

and whooping cough but are also found though less frequently as complications and sequelæ of scarlet fever, diphtheria and influenza.

Of the etiology, pathology and clinical history of acute bronchopneumonia I shall not treat in this paper, as it is a subject well understood by all physicians in general practice, but I wish to call attention to a certain type of bronchopneumonia following the infectious diseases which may be designated as subacute, or, as Holt names it, protracted or persistent bronchopneumonia, and with this type contrast that very frequent and very grave complication and sequela of the infectious diseases—tuberculous bronchopneumonia.

With the same etiology and pathology as acute, this subacute or persistent bronchopneumonia is the most frequent type of the pneumonia following pertussis and it is not uncommonly found among the secondary pneumonias complicating or following measles, diphtheria and influenza.

Its onset and course for the first week or two may not differ from an attack of the ordinary acute bronchopneumonia, or its beginning and course may be gradual and subacute from the first. If beginning acutely, at the end of ten days or two weeks there can be found no tendency in the disease to subside, as in the ordinary acute type, but the fever continues, with rather marked morning remissions, the maximum temperature rarely reaching more than 103.5° . The breathing often improves, probably depending upon the establishment of a tolerance to the encroachment of the disease on the respiratory areas. The general condition, however, remains stationary, or more often there is a gradual but progressive asthenia, with prostration, wasting and anemia. There is anorexia, with aversion to food, and often vomiting and imperfect assimilation. In the worst cases there may be bed-sores and hemorrhagic spots in the skin. Cerebral symptoms and convulsions often supervene before death.

The physical signs may remain stationary during the course of these cases of prolonged bronchopneumonia, or more usually there is an increase in the area of consolidation, particularly posteriorly, caused, caused, as is readily seen, by hypostatic congestion and gravitation of the exudate. Often the air vesicles become distended with the accumulated exudate and areas of consolidation become so marked that the

dullness almost approaches the quality of flatness, and bronchial breathing becomes so exaggerated as to simulate cavernous breathing; such signs are often misleading.

Instead of beginning acutely these cases of prolonged bronchopneumonia may be gradual and subacute in their onset and the progress may be so insidious and rational symptoms so masked that the disease is often well established before discovered by the physician. But when fully established, with such symptoms as fever, cough, emaciation, and increasing prostration, with signs of advancing consolidation, the disease is not difficult to recognize.

Whether beginning acutely or arising gradually and subacutely, its course is usually very irregular. If resolution occurs the symptoms gradually abate, although it may be months before there is a complete restoration to health. The usual course of the fever is from four to ten weeks, but signs of consolidation may persist long after the fever has subsided and recovery apparently taken place. But in all cases recovery is slow, relapses common, a predisposition to second attacks frequent, and often there is left a favorable soil to invite the infection of tuberculosis.

Tuberculous bronchopneumonia complicating the infectious fevers runs a very similar course in the majority of instances to the subacute type of simple bronchopneumonia just described. It, too, may begin acutely or subacutely during the course of or convalescence from measles or pertussis, or more rarely from the other infectious diseases, or it may be ingrafted upon a previously existing simple bronchopneumonia.

As symptoms we find a temperature ranging from 100° to 104°, though not often constantly high; cough usually not very severe, sometimes occurring in paroxysms resulting from pressure of enlarged bronchial glands; respiration always greatly accelerated and usually out of all proportion to the fever, and as the disease advances the dyspnea becomes constant and distressing; pain and hemoptysis are rare; gastrointestinal disturbances are frequent though not often depending upon tuberculous involvement of the alimentary canal; prostration, wasting, and anemia are constantly present in some degree and in the later stages of the disease emaciation is extreme; the spleen is frequently enlarged; the course of

the disease is often, like that of the simple type, marked by remissions and exacerbations.

The physical signs of tuberculous bronchopneumonia do not differ markedly from those of the simple type. We find consolidation with the formation often of cavities; yet in a young child they are rarely recognized, as the excavations are usually small and deeply situated and nearly always filled with tuberculous debris. In older children they can often be made out. The location of the lesions, however, differs from the bronchopneumonia of the simple type. As the disease very often arises from infection through the lymph glands at the root of the lungs it naturally involves the middle lobes first. From this region the disease usually advances forward and upward to the upper lobes although the apices are seldom affected. In the middle zone of the lungs—the interscapular space behind the mammary region in front, in the right lung more often than the left—the tuberculous processes develop.

To more clearly bring out the clinical course and pathological lesions of the subacute types of simple and tuberculous bronchopneumonia I wish to detail several cases.

Case 1.—William H., aged 5 years; brought to me July 7, 1898. A history of measles two months before this time; no physician had been called; under simple home treatment the disease subsided in a week but there remained an harrassing cough; this increased in intensity, and finally the mother noticed that there was considerable fever at night, with loss of appetite and wasting; family history and previous condition good. On examination found a morning temperature of 101° F., a rapid, weak pulse, rapid, shallow respiration, emaciation, and considerable prostration. Physical examination showed a generalized bronchitis. In the right lower lobe posteriorly there was a considerable area showing moderate dullness, harsh and blowing breathing, and increased vocal fremitus. Around this area there could be detected at times faint subcrepitation. A diagnosis was made of prolonged simple bronchopneumonia. On appropriate treatment there began a slow amelioration of the symptoms with a decided increase in weight, the physical signs, however, persisting for some time. There was an uninterrupted improvement in the general condition until, at the

end of five weeks, there was no vestige of the disease left. In contrast to this I wish to briefly outline another.

Case 2.—William T., aged 3 years; family history of tuberculosis; three months before had contracted pertussis. It ran its usual course without serious symptoms; the cough, however, continued, losing its paroxysmal character; the mother soon noticed that the child was losing flesh and having evening fever. When brought to me I found on examination a temperature of 103° F., with about the same symptoms as presented in the above case; the chest showed a marked involvement of the middle lobes; there were areas of dullness, a few very marked, also bronchial breathing, moist râles, and in some places crepitation extending in the right lung nearly to the apex. A diagnosis of probable tuberculous bronchopneumonia was made; after a week's treatment there seemed to be some improvement; the fever ran lower and there was some abatement in the cough, but it was only temporary. The wasting continued, and all the symptoms pointed to a steady progress of the disease. Finally diarrhea developed and soon signs of enlarged mesenteric glands could be detected. This left no doubt of the tuberculous origin of the disease. On making a hopeless prognosis the case left my hands; death occurred a month later I afterward learned.

We perhaps meet with no more difficult problem in the whole field of pediatrics than the diagnosis between simple and tuberculous bronchopneumonia. Only one factor alone can enable us to make a positive diagnosis and that is the finding of the bacilli in the sputum; but in children as the sputum is generally swallowed we can rarely avail ourselves of this positive method. In a few cases we can secure this means of a microscopic test by carefully watching for sputum coughed up in the throat or vomited mucus from the stomach. In the great majority of cases, however, in making our diagnosis, we must study the disease as a whole and investigate and consider every detail of family history, previous history, and surroundings of the patient, then of the disease itself in its mode of onset, clinical course and physical signs.

In the questioning concerning the family history inquiry should be made, not only regarding phthisis in parents or near relatives, but also regarding the existence of meningitis, dis-

ease of the joints or cervical glands in parents and relatives, and particularly in other children of the same family. The mention of "tumors" in the neck, "brain fever," or "white swelling" often throws light upon a family history which otherwise would appear negative.

Next should be investigated the patient's previous history, general condition and surroundings. Careful inquiry should be made regarding tuberculous manifestations in cervical or bronchial glands, bones, joints or skin, or the previous existence of marasmus or other wasting diseases. There should be taken into account the personal and hygienic surroundings; whether the disease might not have been conveyed by contact with a tuberculous mother, nurse or other members of the family; or the hygienic environments—whether reared in a tenement-house, hospital, overcrowded institution, or dark and illventilated rooms. Then, with the child stripped to the skin, the general condition should be noted—the general physique, shape of the chest, and signs of anemia and emaciation. But, more important, we should search for enlarged glands in the neck, axilla and groin. Many German authorities claim that a large percent of tuberculous children have a generalized (peripheral) adenitis. Swollen glands may be quite small, but a careful search in the inguinal, axillary and cervical regions usually detects them. This form of adenitis must of course be separated from that arising from lymphatic syphilis, or septic absorption.

Coming next to the disease itself, we first try to ascertain its mode of onset. Generally simple bronchopneumonia begins acutely while tuberculous bronchopneumonia develops gradually, the constitutional symptoms often appearing some time before any local trouble can be detected. But there are many exceptions to this rule. The simple form may begin gradually and insidiously during the course of or convalescence from one of the infectious diseases, and give little warning of its onset until the disease is fully established; while, on the other hand, the tuberculous form may begin acutely.

The clinical course of the two diseases is so similar that little diagnostic reliance can be placed upon it. In both, the course of the disease may be toward a fatal termination, or in both there are often seen marked periods of remission and exacerbation. We may say in general, however, that in tuber-

culous bronchopneumonia there is a greater tendency for the fever to be steadily higher and also a more marked and progressive anemia and wasting. The physical signs often throw some light upon the diagnosis, as there is generally found in the simple form an involvement of the lower lobes, posteriorly, while in the tuberculous form the middle and upper lobes are more likely to be affected. The character of the physical signs does not differ in the two diseases, and it is only when cavities exist and can be made out that any positive evidence is afforded of the nature of the disease. Care must be taken not to mistake the auscultatory sound arising from a consolidation about a large bronchus for a cavity.

If a meningitis or chronic peritonitis arises during the course of the disease it almost makes certain its tuberculous nature. In considering the different factors that enter into the diagnosis more weight must be put upon the previous history and the general condition of the patient than upon the signs and symptoms of the disease itself. Holt says that if, in a child previously healthy and living in good surroundings, the disease begins abruptly with acute symptoms, the process is simple pneumonia no matter how irregular its course or how prolonged its duration, or what its physical signs. Holt also affirms that in private practice the cases of simple protracted pneumonia outnumber the tuberculous ones three to one. On the other hand, after measles and pertussis, a pulmonary disease arising gradually and insidiously is probably tuberculous in form.

In absence of definite history we must often let our diagnosis rest in abeyance until a month or six weeks of treatment affords us a reasonable diagnostic basis. If there is a gain in flesh and an abatement of the symptoms we probably have to deal with only a simple pneumonia; but if the emaciation progresses and the symptoms continue unabated the process is most probably tuberculous. Many cases, however, are so obscure that time alone or autopsy can insure a positive diagnosis.

The prognosis of tuberculous bronchopneumonia is very bad. Under five years of age it is invariably fatal. In older children, if taken in time, a cure sometimes results, but even in these cases the outlook is much less hopeful than in the adult. In simple, prolonged, or subacute

bronchopneumonia the prognosis is much better. In private practice the mortality would not exceed 25 per cent. It must not be forgotten, however, that pneumonia following the infectious diseases show a much higher mortality than primary pneumonia. The factors to be taken into account in both the tubercular and simple forms are age, previous condition, surroundings, height of the fever, and the extent of the pulmonary involvement. Each factor must be considered, and in all cases must the prognosis be guarded and tentative, for surprises frequently occur and the judgment of the physician is brought into discredit.

TREATMENT—PROPHYLACTIC MEASURES.

In the first place it should be the duty of the physician to instruct the laity regarding the nature of the supposed simple infections, especially measles and pertussis. They should be informed that these diseases are very dangerous to the life of the child; that their danger arises particularly from lung complications or sequelae; that a child during any infectious disease should be carefully guarded, exposure avoided, and every precaution taken to ward off any complication. Any physician is reprehensible who prescribes for a case of measles or whooping cough and does not warn the mother of the danger from pulmonary complications; that a fever arising during the course of the disease may mean mischief; that a cough continuing during convalescence may mean serious trouble; that a cough and a loss of flesh, even if months after a recovery from any infectious disease, may mean consumption and a fatal termination. The belief that every child must sooner or later contract measles and pertussis is no justification for unnecessary exposure, for the younger the child the greater the mortality. When infection occurs isolation must be carried out and thorough disinfection of the room when recovery ensues. Catarrh of the air passages in children should receive more attention. The removal of enlarged tonsils and adenoid growths is an important factor in the prevention of pulmonary disease.

The prophylaxis of tuberculosis is a large subject, but it will suffice to say that our control of the disease at present lies almost entirely in prophylactic measures. Every means must be employed to destroy the bacilli and limit the progress of the disease. A tuberculous mother should not suckle nor sleep

in the same room with her children. In families with a tuberculous taint the infectious disease should be most carefully watched and every means taken to fortify the system against any possible inroad of tuberculosis. The proper hygiene of childhood is a subject too often neglected both by physician and laity—proper food, suitable clothing, hygienic surroundings—are the most important factors by far in determining the life, health and future welfare of the growing child.

The general treatment of these two diseases is most important. First, a bountiful supply of fresh air, for oxygen acts most efficiently as a heart and respiratory stimulant. If the child is confined to its bed, proper ventilation, so as to secure a temperature of 65° F., if the fever is high. If there is little fever, a temperature of 60° to 70° F. is best. If draughts are avoided there is no danger of the child catching cold. Too little attention is usually given to this subject of ventilation. How often we enter the sickroom to find a child struggling for breath in an atmosphere hot, close and vitiated, with the available oxygen being consumed by the gas-jets and the presence of numerous relatives and friends. If the weather is pleasant the child may be taken out into the sunshine or from the crowded city to the country or mountains.

In these cases of prolonged pneumonia the disease can often be thrown off if the patient's strength can be maintained. A nourishing food and such stimulants as alcohol and strychnine are most essential.

Of specific drug treatment in both simple and tuberculous bronchopneumonia creosote must be given first place. It acts beneficially in allaying cough, reducing temperature, increasing appetite, and promoting assimilation and nutrition. After the acute symptoms have subsided it is best administered, I think, in the form of Merck's guaiacol, beginning in doses of one drop for each year of the child's age and increasing one drop a day until the maximum dose of twice or three times the initial dose is reached. It is best given in a third of a glass of milk after each meal. In this way it is not disagreeable and children take it readily. In the tuberculous cases, whether creasote or guaiacol has any specific action in destroying the bacilli is a debatable question. The only other drug that deserves mention is cod liver oil. In tubercular children this drug in many cases seems to exert a beneficial influence, not by any selective affinity for the pulmonary area but prob-

ably by acting as a general nutritive tonic. But too much reliance cannot be placed on the drug treatment of these diseases. More emphasis must be placed upon the general and hygienic measures, and when all else fails a change of climate will often accomplish a cure in otherwise hopeless and incurable cases.

Errata.—In Dr. John Zahorsky's article, vol. xi, No. 6, under caption, "The Human Milk is Deficient in Solid Constituents," on page 209, 5 per cent. and 7 per cent. (proteids) should read 0.5 per cent. and 0.7 per cent. respectively.

In the same issue the address given at the end of Dr. C. W. Allen's article should be 30 East Thirty-third street.

LIME BURNS OF THE EYE.

The most frequent burn of the eye is that from lime, and as this is the most destructive agent that can be brought into contact with the surface of the eye, its results are apt to be disastrous. When lime is permitted to remain in the eye, even in the smallest quantity, it acts as a most powerful irritant, but if in any considerable quantity and allowed to remain for any time, extensive sloughing of the eyeball and lids invariably results and complete loss of the eye follows. This is because unslaked lime rapidly absorbs the water from the conjunctiva with which it is brought into contact and emits a great amount of heat, leading to the rapid death of the part. As a rule the copious discharge of tears that attends the entrance of a foreign body into the eye is beneficial, inasmuch as it frequently serves to wash out the offending substance, but in lime burns this lacrimation only adds to the mischief, as it causes further slaking of the lime and increases causticity.

The first thought in the treatment of lime burns should be directed toward the removal of the offending substance. The lids should be carefully everted and every part of the conjunctival surface carefully cleansed with oil, as this substance prevents further slaking of the lime; but if this be not feasible a diluted solution of vinegar, which is generally within easy reach, should be instilled, or even an excess of water may be employed.

Fuchs recommends dropping a concentrated solution of sugar into the eye after lime burns, since cane-sugar forms an insoluble compound with lime.—Dr. W. C. Posey, *Therapeutic Gazette*.

EDITORIAL COMMENTS.

The Diagnosis Between Varicella and Variola

The comparative rarity of smallpox and the care that is exercised to prevent contagion by immediately moving away suspicious cases occurring in general hospitals have left medical students and practitioners scant opportunity for observing it. It used to be said sneeringly of some poor, seedy doctor or other, "He would not even know a case of smallpox." This can now be said, and too in no invidious sense, of a great number of medical men generally esteemed as competent. The only remedy, of course, lies in furnishing greater facilities to students and members of the profession for observing contagious diseases occurring in isolation-hospitals. The recent epidemic of smallpox seems to have been somewhat atypical in onset and so mild in course that rather frequently physicians were not put on their guard until one or two fatal cases had occurred in a community.

Dr. W. M. Welch published an article last winter in the *Philadelphia Medical Journal*, in which he comments upon the mildness of the present epidemic throughout the South and calls attention to the frequency with which it has been mistaken for chickenpox. He states the differential diagnostic points between the two affections and then goes on to say: "While there should be no difficulty in differentiating between these diseases in any case in which either group is complete, yet it must be admitted that smallpox sometimes occurs, as at present, in a form so atypical as to make it difficult to decide in which category the symptoms belong. It may, however, be stated in a general way that a mildly febrile eruption appearing without prodromal symptoms, being distinctly vesicular from the beginning and commencing to desiccate on the second or third day, should be regarded as chickenpox; and, on the other hand, an acute exanthem preceded by an initial stage of forty-eight hours, in which the temperature was dis-

tinctly elevated, beginning as papules and ending in vesicles or vesico-pustules, even though the period of evolution be short, should be regarded as smallpox. At any rate it would be advisable for the safety of the public to regard such a case as suspicious, and surround it with such precautionary measures as are best calculated to prevent the spread of infection."

T.

**Prophylactic Injections of
Tetanus Antitoxin**

No fact is perhaps more clearly established in the history of sero-therapy than that prophylactic injections of antitoxin will prevent subsequent development of experimental tetanus in animals. Veterinarians have appreciated the prophylactic value of this remedy for the past four or five years. From the first of August, 1895, to the first of June, 1897, Nocard distributed to veterinarians 7,000 bottles containing 10 cc. each of tetanus antitoxin. He learned the results in 2,727 cases; 2,300 cases were injected immediately after operation, usually castration. None of these animals developed tetanus. Of 400 animals that received the serum several days after operation, likewise none had the disease. During this same period 63 correspondents of Nocard observed 259 cases of tetanus in animals that were not injected; among them were 191 horses. A veterinary had 5 cases among 8 castrated horses. From this time on he injected all animals upon which he operated. He then performed 163 castrations on horses without having a single case (*vid.* Coumont and Doyon, *Le Tétanos*. Paris, 1899); Alexander Lambert (*Medical News*, July 7, 1900) quotes the experience of Bazy, in France, who had four cases in his practice. He then made it a rule to use prophylactic injections of antitoxin in his operative cases. He has since had one case in a patient who was not immunized for some reason. An epidemic of puerperal tetanus at the Gebaer Anstalt, at Prague, was also cut short by the prophylactic use of this substance. Park recommends its employment in wounds

from toy-pistols, which seem especially liable to cause tetanus. For prophylaxis 10 cc. are used; this dose had better be repeated in a few days should the wound not do well. During epidemics of this disease, in certain localities where it is known to be prevalent, and in certain classes of wounds, as those from toy-pistols, the use of the remedy in this manner would almost seem to be a duty; so much the more is it indicated for the reason that, while its prophylactic power is great, its curative power is certainly very small in acute cases. Of course local cleansing of the wound must be carefully carried out also.

T.

The Radioscope in the
Diagnosis of Pleurisy

At the February meeting of the Société de Pédiatrie attention was again called by M. Variot and M. Chicotot to the value of the conclusions drawn from radiosopic examination of the chest in pleuritic effusions in infants. This method is esteemed as of especial value in babies under six months of age. In older children the ordinary methods are usually satisfactory with the exercise of a little patience. The radioscope however enables one to draw very accurate conclusions in a few moments. In pneumo-thorax the level of the fluid is readily seen to change when succussion is practised. It is impossible however thus to recognize the difference between serous and purulent exudates. Displacement of the heart and mediastinum is much more accurately determined by means of the radioscope than by percussion and furnishes a valuable guide as to the amount of fluid present and the indications for treatment. M. Ausset lauded the radioscope as a means for recognizing interlobular pleurisy and cited two cases occurring in his own practice. In the first an interlobular pleurisy was suspected but a most careful examination failed to convince him. The radioscope settled the question and guided him in evacuating the pus. The second case was one of empyema which had at first been mistaken for tubercular consolidation of the lung.

T.

CORRESPONDENCE

February 16, 1901.

To the Editor of PEDIATRICS:

Sir.—I notice in PEDIATRICS Vol. XI. No. 3 P. 115 a report of my remarks on enlarged spleen and splenic anemia; they look very foolish as they stand.

What I said was "*Idiosyncrasy seems to play an important part in causing enlargement of the spleen.*" Take typhoid fever and pneumonia, for example. In one disease (typhoid fever) enlargement is the rule, yet in a fatal case I have seen it weigh no more than 2½ ounces, in the other disease (pneumonia) marked enlargement is unusual, yet I have seen it reach 20 ounces. I further remarked that although enlargement of the spleen is usually present in the curious yellowish anemias of children, I have seen cases in which I felt confident that I should find the spleen enlarged but such was not the case. I meant to imply that I doubt whether enlargement of the spleen is a necessary concomitant of this anemia, and when it is enlarged there is some inherited peculiarity that renders it susceptible to whatever may be the cause of the enlargement.

yours very sincerely,

THEODORE FISHER.

Harley Lodge, Clifton Down, Clifton, Bristol.

DRY NURSE.

Another dilemma was produced a little while ago on the western circuit by the introduction of the word "dry nurse" in an address to the court. This bewildered the judge, who asked if a dry nurse was a nurse who dried babies after they had been washed. That solution did not occur to the learned counsel, who, after some hesitation, said he thought it meant a nurse who was not addicted to drinking and therefore most suitable to look after infants. Nobody seemed to know what the term really meant, though several more guesses were made, the last of them that a dry nurse was one who could not amuse children.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting October 18, 1900.

WILLIAM H. THOMSON, M.D., President.

INFANT FEEDING.

Dr. A. D. BLACKADER, of Montreal, opened the evening's discussion of this subject with a paper entitled, "**The Advantages and Limitations of Sterilizing and Pasteurizing Milk.**" He said that there was reason for believing that all forms of bacteria are undesirable in milk for infant feeding, and that it had been proved that 99.8 per cent. of the bacteria could be destroyed by pasteurization. Milk exposed to a temperature of 140° F. would have between 96 and 99 per cent. of its bacteria destroyed, and if during the heating the milk is stirred so to prevent the formation of a pellicle on its surface even tubercle bacilli would be killed. When milk is heated to the boiling point it becomes decidedly altered in taste, smell and composition. The albumin is coagulated, the lecithin and nuclein are destroyed and the organic phosphates converted largely into the inorganic phosphates. It was also probable that milk when heated to this temperature is deprived of certain important ferments. These few facts seemed a sufficient argument in favor of pasteurization as against sterilization at a higher temperature. It should be borne in mind that pasteurized milk must be preserved at a low temperature.

Dr. J. P. CROZER GRIFFITH, of Philadelphia, followed with paper on "**The Relation of Scurvy to Recent Methods of Artificial Feeding.**" Reference was made to the recent collective investigation under the auspices of the American Pediatric Society. This study has seemingly brought out the fact that food containing or derived from starch is a powerful factor in the causation of scurvy. In 356 of the cases the kind of food used at the time of the appearance of the scurvy was noted. In 16 of his own cases proprietary foods seemed to be an important factor. It could not be gainsaid that scurvy

developed in some children who had been fed on raw milk as well as in those fed on milk that had been only moderately heated. But in the study of this important phase of the subject the individuality must ever be reckoned with.

Dr. T. M. ROTCH, of Boston, discussed "**The Use of Cereals, Emulsions and Proteids.**" It seemed to him thoroughly irrational to introduce into an infant's food an element, such as starch, which must of necessity be a foreign constituent, and hence objectionable. Although barley water was the favorite with those who advocate the addition of cereals to milk for infants, experiment showed that there was no difference in the action of the various cereal diluents provided they were used in the same degree of dilution. The speaker quoted certain experiments recently conducted at his suggestion by Drs. White and Ladd, of Boston. These showed no distinct difference between laboratory milk and milk that had not been disturbed by the centrifuge, as regards the fineness of the emulsion. This had been the result of his own extensive clinical experience. He was disposed to believe that whey is a better diluent of milk than barley water as whey disturbs less the emulsion.

Dr. L. EMMETT HOLT read a paper on "**The General Principles of Infant Feeding, and the Home Modification of Milk.**" He started out with the proposition that breast-milk being our ideal of an infant food, and fresh cow's milk being the nearest approach to, it the task of the physician must be to so modify the cow's milk as to adapt it to the needs of the individual infant. Such milk contains all the necessary elements but in improper proportions for the infant. Experience has demonstrated beyond all doubt that no single formula could be made to do duty generally. There should be at least three formulæ, viz.: (1) One in which the fat is three times the proteids, or the ratio found in breast-milk; (2) one in which the fat is twice the proteids, and (3) one in which these two are equal or nearly so. As a rule, the first formula is suited for normal cases up to the third month; the second from the third to the tenth month, and the third from the tenth to the thirteenth month. When ordinary milk has stood quietly for about four hours, its upper third will be found to contain prac-

tically all the cream. The first formula calls for 3 to 1 or 10 per cent. fat which is obtained by taking one-third of the upper milk. The second formula calls for 7 per cent. fat or one-half of the milk.

The most usual modifications of each of the three foregoing formulæ are given below:—

FIRST SERIES.

1.—Fat 1.0 per cent.	Proteids 0.33 per cent.
2.— “ 1.3 “	“ 0.44 “
3.— “ 1.6 “	“ 0.55 “
4.— “ 2.0 “	“ 0.66 “
5.— “ 2.5 “	“ 0.80 “
6.— “ 3.0 “	“ 1.00 “

Milk sugar for the first three, $\frac{1}{2}$ ounce to each 12 ounces of food, or 5 per cent.; for the last three, $\frac{1}{2}$ ounce to each 10 ounces.

Lime water 1 ounce to each 20 ounces of food.

SECOND SERIES.

7.—Fat 1.00 per cent.	Proteids 0.50 per cent.
8.— “ 1.40 “	“ 0.70 “
9.— “ 2.00 “	“ 1.00 “
10.— “ 2.40 “	“ 1.20 “
11.— “ 2.80 “	“ 1.40 “
12.— “ 3.50 “	“ 1.70 “
13.— “ 4.00 “	“ 2.00 “

Milk sugar for 7, $\frac{1}{2}$ ounce to 12 ounces of food or 5 per cent; for 8, 9 and 10, $\frac{1}{2}$ ounce to 10 ounces or 6 per cent; for 11, 12 and 13, $\frac{1}{2}$ ounce to 8 ounces or 7 per cent. Lime water 1 ounce to each 20 ounces of food.

THIRD SERIES.

14.—Fat 0.50 per cent.	Proteids 0.45 per cent.
15.— “ 1.00 “	“ 0.90 “
16.— “ 1.50 “	“ 1.35 “
17.— “ 2.00 “	“ 1.80 “
18.— “ 2.50 “	“ 2.25 “
19.— “ 3.00 “	“ 2.70 “
20.— “ 3.50 “	“ 3.00 “

Milk sugar for 14, $\frac{1}{2}$ ounce to each 12 ounces of food or 5 per cent.; for 15 and 16, 6 per cent.; for 17 and 18, 7 per cent.; for 19 and 20, 6 per cent. Lime water 1 ounce to each 20 ounces of food.

Dr. JOSEPH E. WINTERS opened the general discussion. He said that careful observation impressed one with the fact that a breast-fed infant is seldom ill, rarely coming under the physician's care until after the period of weaning. The mortality among breast-fed infants, including faulty inheritance, is 8 per cent., whereas the mortality in artificially-fed infants is 51 per cent. Moreover, the breast-fed infant is equally healthy in all surroundings, while the artificially-fed infant of the well-to-do thrives only under favorable conditions, and in the tenements and public institutions yields a frightful mortality. It has been estimated that 90 per cent. of these deaths are due to faulty feeding. In institutions and tenements it was not uncommon to find a dozen foods tried within as many weeks and all with equally disastrous results. It was most discouraging to realize that the medical profession is responsible for this hazardous method, for at every medical meeting for the discussion of infant feeding some physicians would advocate most unscientific and irrational modes of feeding, such as the use of cereals and various manufactured foods as diluents of milk. These opinions are at once utilized by the manufacturers of infant foods and their quotations from physicians are responsible for all the dangerous modes of feeding now in vogue. Without them these foods could not long retain their hold on the public or with the general practitioner. The enormous difference in the mortality between natural and artificial feeding is due to the extensive use of these cereal foods. The proportions and the nature of the constituents of human milk should be our criterion of what an infant's food should be when artificially made. The artificial food must contain nothing that is not found in human milk; it must be of animal origin, and must be pure and fresh. Dr. Arthur V. Meigs discovered that human milk contains but 1 per cent. of proteid, and as cow's milk contains about 4 per cent. of proteid, in order to make it a suitable infant's food it must be so diluted as to contain but 1 per cent. of proteid. It was often necessary for the first few days of life to reduce this to $\frac{1}{2}$ of

1 per cent. As cow's milk when diluted becomes deficient in fat and milk sugar these must be supplied. Dr. Winters said that with a view to determining accurately the percentages of fat and proteids in different cream layers in a quart jar of milk he had had numerous analyses made by Professor Adriance and by Dr. Lederle, of the New York Board of Health, and by Mr. Henry C. Sherman, at the Columbia University. The upper ounce from a quart of milk sixteen or more hours old contains fat 23.8 per cent; proteids 2.9 per cent, and milk sugar 3.9 per cent. The upper 4 ounces contain fat 21.8 per cent; proteids 3 per cent; milk sugar 4 per cent. The upper 8 ounces contain fat 17 per cent; proteids 3.1 per cent, and milk sugar 4.3 per cent. In the first few days of life not more than .25 per cent. of proteids and not less than 2 per cent. of fat should be used. With such low percentages it was possible to feed an infant from the very first day without any disturbance of digestion, and when this is done the infant does not lose weight the first week as it does when allowed to go two or three days before beginning feeding. The prescription for the first week should read: fat 2 per cent.; proteids. 25 per cent.; milk sugar 7 per cent. With a prescription containing .50 per cent. of proteids there should be 3 per cent. of fat, and with 1 per cent. proteids 4 per cent. fat. It was well to increase the proteid as rapidly as digestion would allow, but this must be done more slowly in summer than in winter. When the feeding has been properly carried out from birth, an infant should be taking at the end of the fourth month 2 per cent. of proteids in winter and 1.5 per cent. in summer. During all the years of his experience with laboratory feeding he had met with unvarying success, yet he had never prescribed cereals. It was erroneous to suppose that pasteurisation makes cow's milk (even if fresh and pure) more suitable for the infant. He had seen scurvy develop in children who had been fed exclusively on pasteurized modified milk. Where pure fresh milk can be obtained there is no need to resort to pasteurization as the only object of such heating is to destroy the contained disease germs. When milk is cooled immediately after milking to 40° F. all bacterial growth is at once arrested, and this continues if the milk is preserved at this low temperature; hence, under such conditions it may be kept sweet for three weeks. By medical supervision and scrupulous cleanliness in

handling the milk it is possible to get a milk having all the advantages and none of the disadvantages of pasteurized milk.

Dr. H. D. CHAPIN objected to the theory of percentage feeding on the ground that it takes no cognizance of the difference in composition of cow's milk and human milk. It was for this reason that the addition of cereals to cow's milk was not only justifiable but indicated. Any disturbance arising from the starch so introduced could be overcome by the use of dextrinized gruel, and moreover, a gruel so prepared was especially efficacious in mechanically separating the particles of coagulum.

Dr. R. G. FREEMAN said that mention had been made of the fact that breast-fed infants are rarely ill before weaning; this could not be because the milk is sterile, as it must be evident that the milk flowing from fissured and dirty nipples is almost sure to be contaminated by the introduction of bacteria. Most of the milk received in this city has been transported long distances and is twenty-four hours old on arrival; this made it forty-eight hours old before the last of the day's supply is consumed by the infant. Under such circumstances it seemed reasonable and proper to pasteurize it at 155° F. for twenty minutes, a process which has practically no effect on the composition of the milk.

Dr. LOUIS FISCHER thought that scurvy was known to be common in infants fed on heated milk, the disease rapidly subsided when raw milk was substituted, this was a pretty good argument in favor of starting out by feeding the infant raw milk. His experience had been that children fed on laboratory milk develop more slowly than usual and are anemic and flabby. Percentage feeding was right in theory, yet he had not found it successful in practice. One reason for its failure in practice was perhaps to be found in the frequent fluctuations which naturally occur in the quality of human milk and which, of course, cannot be imitated in laboratory milk. This fact also points to the probability that it is not necessary to secure the mathematical exactness advocated by some of the exponents of percentage feeding.

Dr. G. A. SPALDING said that he had had good success with the use of raw modified milk and found that it could be readily adapted to the individual needs. He had not found it necessary or desirable to add cereals.

ABSTRACTS

THE TECHNIQUE OF LUMBAR PUNCTURE.

LEWIS A. CONNER, in the *New York Medical Journal*, May 12, 1900, describes the method of puncturing the spinal cavity for diagnostic purposes. Since Quincke's description of this procedure was published in 1891 certain variations have been introduced.

The position of the patient may be either sitting or lying on the side. The best place in which the puncture is to be made for the purposes of diagnosis is the lumbo-sacral space. Puncture in the sitting position should be confined to small children. Whatever the position decided upon, the essential point is to secure the greatest possible degree of ventral flexion of the spine in order that the lumbar laminae may be separated as widely as possible. If the child is in the sitting position, it must be bent well forward and firmly held. If the horizontal position is selected, the patient should be made to curl up, with the knees and chin as near together as possible.

For right-handed operators the manipulation is best done by standing on the right side of the patient and bending over the body, the patient being on his right side and as near the edge of the bed as he may be.

The technique of lumbar puncture is described as follows by Dr. Conner:

Anesthesia.—General anesthesia is in most cases entirely unnecessary. The pain is usually no greater than that produced by puncturing the chest. By anesthetizing the skin with cocaine or a freezing spray the needle can usually be introduced with very little discomfort. Where the patient is delirious or very restless it is well to have at least two assistants who can hold him firmly in the proper position and can prevent any sudden movement, since even a slight motion may be very disconcerting during the manipulation of the needle.

Asepsis.—Just such perfect asepsis, as to field of operation, instruments, and hands, is demanded in this small procedure as would be exercised by the surgeon in opening any serous cavity. Not only must the danger of infecting the meninges be guarded against, but the fluid evacuated must be free from the suspicion of contamination if a bacteriologic examination is to be made.

The lower half of the back and the operator's hands are carefully sterilized in the usual way. The needle, and the syringe when possible, is boiled for ten minutes. If the syringe cannot be boiled, it should be filled and soaked in 4 per cent. carbolic solution for several hours.

Landmarks.—The different spinous processes may usually be locat-

ed either by counting downward from the twelfth dorsal vertebra, which can be identified by its articulation with the twelfth rib, or by locating the first spinous tubercle of the sacrum, which is usually prominent and distinct from the lower ones. When patients are fat or very muscular, however, the bony prominences are often very indistinct and difficult to identify in this way, and much the more satisfactory means of locating the vertebræ is, as Jacoby well says, by taking a line between the highest points of the iliac crests. This line regularly crosses the fourth vertebral spine. When the spinal column is well flexed and in position for puncturing, I have found that the line usually passes near the upper edge of the fourth spine. Occasionally it will cross the space between the third and fourth spines.

Instruments.—An antitoxin needle 4 or 5 cm. ($1\frac{3}{4}$ or 2 inches) long and 1 mm. in diameter serves admirably in children. For adults the needle should be 8 or 9 cm. long and of a diameter sufficient to give the rigidity needed to penetrate readily the tough ligament. While the needle can be and frequently is introduced without being attached to the syringe, the latter is a distinct aid to one in directing the needle accurately. A syringe which can be sterilized by boiling is most convenient, but is by no means essential. If the syringe is sterilized by soaking in carbolic solution, it must be thoroughly washed out with sterile water before being used. A sterile test-tube stoppered with cotton should be at hand to receive the fluid. A mercury manometer for estimating the cerebrospinal pressure is very convenient, but, as Stadelmann says, an approximately accurate idea of the pressure can be obtained by using a bent glass tube of small caliber. The short horizontal limb is attached by a bit of rubber tube to the needle while the long perpendicular limb will record the height of the column of fluid.

Puncture.—After the desired space is located, the interval between the spines is marked with the finger of the left hand and the needle is introduced at a point opposite the upper edge of the lower spinous process and in a line just outside (i.e., a few millimetres from the median line). The needle is directed very slightly upward and toward the median line, with a view to having it in the median line when it enters the subarachnoid space. In children the puncture can, as Quincke says, be made directly in the median line; but even in children the supraspinous and interspinous ligaments offer considerable resistance and it is usually wiser to avoid these by going slightly to one side. As the needle passes through the interlaminar ligament the resistance is increased and a slight grating feeling is noticed; beyond this the needle slips in very easily and is introduced until fluid begins to appear in the syringe.

In children the fluid is reached at a depth of from 2 to 3 cm.; in adults at from 4 to 7 cm. If bony resistance is met on introducing the needle the latter is to be withdrawn for a slight distance and directed at a slightly different angle.

After the fluid appears, the syringe is taken off and the fluid is col-

lected in the sterile tube. In the horizontal position the fluid usually flows drop by drop. In the upright position it frequently runs in a gentle stream. It is much better to let the fluid run from the needle than to aspirate with the syringe. The sudden reduction of pressure by aspiration may easily produce unpleasant symptoms. Occasionally, when the flow through the needle is unsatisfactory, it may, however, be necessary to apply gentle suction with the syringe.

The amount of fluid to be removed will depend upon the purpose of the puncture. If for diagnosis alone 10 or 15 c.cm. are usually ample. If for therapeutic purposes it may seem desirable to remove several times that amount. The quantity of fluid which can be safely withdrawn varies enormously in different individuals and under different pathological conditions. Perhaps the safest guide is the condition of the patient. The flow should be stopped at once upon the appearance of such symptoms as headache, faintness or a change in the character of the pulse.

Kroenig relies upon the manometer and stops the flow when the cerebrospinal pressure reaches 125 mm. of water. This he regards as the normal pressure when the patient is in the horizontal position.

When the needle is withdrawn, a procedure which usually requires some force, the skin wound is covered with a bit of sterile cotton and with collodion.

Accidents.—These are infrequent and for the most part trivial and unimportant, although they may be annoying. It rarely happens that any difficulty is experienced in entering the spinal canal; but occasionally, when one is sure the needle is in the canal, no fluid will appear.

This may be due to one of several causes—the needle may have become plugged while being introduced, or it may not have entered the subarachnoid space, even though in the canal. There may be inflammatory adhesions between arachnoid and pia, with more or less complete obliteration of the subarachnoid space; or the contents of the space may be of gelatinous or even wax-like consistence.

Occasionally the fluid instead of being clear or turbid, may be blood-stained from injury to some small vein. Aside from the fact that it obscures the character of the cerebrospinal fluid this has no importance.

A number of more serious accidents or sequelae have been reported, yet they are certainly of very rare occurrence and have been associated in almost every case with the removal of a very large quantity of fluid.

Rieken saw in one case violent twitchings of the right leg during puncture.

In a few cases of uremia and brain tumor death has followed, within a few hours, the withdrawal of a large amount of fluid.

Those conditions in which the greatly increased cerebrospinal pressure has existed for some time, e.g., brain tumors, are the ones apparently which bear least well the sudden removal of a large quantity of fluid.

ON A NEW METHOD OF OPERATION FOR EXSTROPHY OF THE BLADDER.

CARL BECK, in the *New York Medical Journal*, August 15, 1900, speaks of the disadvantages of the ordinary operation for exstrophy and describes a new method. When the flaps of skin are turned from the abdomen to form an artificial covering for the bladder the hairs of the integument become encrusted with salts and no retentive power is left in the bladder so that the use of the rubber receptacle is still necessary.

The other methods—the implantation of the ureters into the sigmoid flexure and the construction of a new bladder from a loop of intestine, transplanting the ureters into it are dangerous (infection) and difficult of execution. The method used by Dr. Beck consists in freeing the margins of the protruding bladder walls, exposing the recti-muscles, severing them from their insertion at the pubes and partially from the transverse fascia until they are so far mobilized that they can be reflected and united, thus forming an anterior vesical wall. In a recent case he still further improved this method, as follows:

“In a boy 5 years of age I succeeded in creating a much more solid anterior wall in the following manner: after the margins of the protruding bladder wall were freed the incision line running through healthy tissue as much as possible, they were dissected backward to the extent of about 1 cm. When I had ascertained that the freshened margins could be approximated without tension, both recti muscles were exposed and incised along their internal margins to the extent of a little less than half their thickness. Two transverse incisions connecting the outer and inner margins of each rectus muscle and extending down into the substance of the muscle to the same extent completed the outlining of the flaps. The lower incision lines were as near the symphysis as possible, and the other one was below the umbilicus. Beginning at the internal margin of the incision the upper layers of fibers of the recti muscles were divided until the flaps formed could be lifted near the outer margin with which they remained connected after the manner of a hinge.

“The bladder walls now being united with thin iodoform-silk sutures, the reflected muscular flaps were united above. The subcutaneous suture was chosen for the integument, which was supported by four relaxation-sutures, also consisting of iodoform-silk. They were applied $\frac{3}{4}$ of an inch distant from the wound margins so that there was no direct contact with the wound line.

“Thus a small but virtually normal bladder was secured, protected by a firm muscular layer which is likely to distend later on.”

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.

Continued from April 1st issue.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, November,
1900.

1. Report of an Autopsy in a Case of Congenital Dislocation of the Hip Operated upon According to Lorenz's Method. By Dr. NOVE JOSSERAND.

Her pelvis was obtained by the author, who gives an account of the anatomic conditions found. The muscles of the thigh on the affected side were atrophied, especially the adductor group. The only evidences of the operation on these muscles were some tendinous scars which he found on the middle adductor at its pubic insertion and on the great adductor at its upper extremity. The general appearance of the hip joint was exactly like that of the opposite articulation. Viewed from the front, however, it was noted that the head of the femur was more prominent on the operated side, that the acetabulum was not deep enough to contain it and that there was a slight tendency to external rotation. The position of the joint, as regards the pelvis was absolutely normal. No anomaly existed in the direction or in the length of the femoral neck. The femur was somewhat thinner on the operated side. There was no appreciable atrophy of the pelvis, but the upper outlet presented a slightly asymmetric outline. On the external surface of the pelvis immediately above the hip joint at the margin of the acetabular cavity there was a depression partly filled with fibrous tissue, irregular, elongated from before backward, and not very deep, which probably represented the old acetabulum or the point at which the head came into contact with the pelvis before the operation. The movements of the joint were tested before and after dissecting the muscles. It was found that the motions were normal in range and character, except that abduction was a little more easily performed than under normal conditions, and that internal rotation was slightly limited.

A study of the anatomy of the joint itself showed that the capsule was normal in all respects. It was perhaps a little less tense than normally, but was sufficient to hold the articular surfaces in apposition; the head of the femur was found to be a little larger on the affected side, the round ligament was missing. The cartilages seemed to be absolutely normal in form and position. The acetabulum was normal in almost all respects and contained its lining of cartilage, but it was slightly less deep than that on the normal side, the difference being about 4 mm. at

the deepest point. The acetabular cartilage was thinner on the normal side and was only well developed on the posterior aspect of the cavity. To sum up, in spite of certain imperfections, this joint was found to be normal in all respects and to be fully capable of serving the purpose of the normal hip joint. In this case there was therefore a true radical cure of congenital dislocation of the hip.

2. A Contribution to the Study of the Toxic Action of the Milk of Tuberculous Animals. By Dr. JENNA.—(An address delivered before the Congress against tuberculosis, held at Naples, April, 1900). Clinical facts and experimental results have shown clearly that tuberculosis may be transmitted through the milk of animals affected with the disease. This fact is to-day incontestable. Until now everybody agreed that this transmission takes place by the entrance of tubercle bacilli into the milk, and that it was sufficient to boil the milk to destroy these germs and with them the danger of tuberculous infection. The researches of Demichelle and of Michelazzi have shown that it is not necessary for the bacilli to enter into the milk, but that the toxins produced by the tubercle bacilli are sufficient to produce grave lesions in susceptible persons. And these toxins persists even after the milk has been sterilized at 100° C. Another important point in connection with this subject has not been studied thus far, and that is the action of the dead tubercle bacilli in the milk of tuberculous animals. The author devoted himself to the study of these effects on the animal organism and for this purpose experimented on a number of newly-born rabbits which he fed on sterilized cow's milk into which he had introduced tubercle bacilli, previously killed by heating to 100° C. A certain number of control animals were fed on sterilized milk without tubercle bacilli and others were nursed by their mothers. The author found that the rabbits fed with milk containing dead tubercle bacilli gained in weight but very slowly and after fifteen to twenty days many of them died of cachexia. Others died of marasmus after the milk had been stopped. The autopsies showed the presence of a slight enteritis characterized by a redness of the intestinal mucosa and a fatty degeneration of the liver. The rabbits fed on sterilized cow's milk without any tubercle bacilli and the animals allowed to nurse were found to gain in weight rapidly and did not show any lesions. The conclusion is that milk of tuberculous cow's is dangerous even if sterilized at 100° C.

3. Non-Tuberculous Acute Meningitis. By Dr. NETTER.—Read before the Paris Congress. (See abstract in PEDIATRICS, vol. xi., No. 1, p. 37).

4. Non-Tuberculous Acute Meningitis in Children. By Dr. L. CONCETTI.—Read before the Paris Congress. (See abstract in PEDIATRICS, vol. xi., No. 1, p. 37).

1. A Case of Very Severe Athrepsia in a Newly-Born Child; Encephalopathy; Recovery. By Dr. L. BAUMEL and Dr. SCHEYDT.—This case shows the following points: (1) The amount of weight that can be lost by a child in its earliest infancy without destroying life. In this case the loss was 680 grammes; (2) the long duration of athrepsia in some cases; in this instance it was three months; (3) the rapidity with which a child may regain its weight under favorable conditions; not only will it gain the amount proportionate to its age but also the amount lost during the illness; (4) the curbiility of athreptic encephalopathies in contradiction to the opinion of Parrot himself.

2. Concerning the Acute Non-Tuberculous Meningitides in Children. By Dr. LUIGI CONCETTI (*Continued*).—Read at the Paris Congress. (See abstract in PEDIATRICS. vol. xi., No. 1, p. 37).

3. The Theories of Artificial Infant Feeding; the Mother's Milk as a Ferment.—By Dr. ESCHERICH.—A discussion at the Paris Congress. (See abstract in PEDIATRICS, vol. x., No. 12, p. 472). (First question before the Congress, Infant Feeding).

4. The Treatment of Diphtheritic Paralysis. By Dr. RAMON GOMEZ FERRER.—The author reports two cases of diphtheritic paralysees which show that (1) certain cases of this paralysis are due to the presence of the Klebs-Loeffler bacillus in the nerve centers, as has been shown in the studies of Barbier and Ulmann; (2) that the best treatment of such cases is by the administration of diphtheria antitoxin. Two cases are of course too few to formulate a conclusion, but the rapidity with which the paralysis disappeared after the administration of the serum in these two cases impels the author to believe in the efficacy of the antitoxin treatment for such cases.

PEDIATRIA, November, 1900.

1. A Comparative Study of the Protective Influence of the Liver in Young and Adult Animals. By Dr. GUISEPPE ANTONIO PETRONE.—Read at the Paris Congress. (See abstract in this department of PEDIATRICS under the heading of *Revue Mensuelle des Maladies de l'Enfance*, August-September, 1900.

2. Concerning Pertussis. By Dr. GIOVANNI BERTI.—The author reviews an article written by Dr. Rondinini, in the *Corriere Sanitario*, August 12, 1900, entitled, "On Pertussis and its Treatment." In this article Rondinini speaks of attacks of spasmodic dyspnea which occur in children affected with pertussis and come on at irregular intervals, particularly at night. Rondinini says that no classical writer on whooping

cough has mentioned this phenomenon. In reply, the author says that these attacks may be found described by Moussous and by West in their monographs on children's diseases, as well as by a number of other writers.

It is true that in pertussis there are frequently attacks of dyspnea, which occur without any apparent cause and recur at irregular intervals. They seem to be independent of the paroxysms of cough and consist of a series of very rapid respirations. These attacks are especially frequent during the acme of the disease but they may persist after the other symptoms have disappeared. They have been described by many authors but are comparatively little known. They must not be confounded, however, with the habitual dyspnea which is present in many cases of pertussis. Their occurrence is, of course, not limited to pertussis, but may be a result of the general intoxication which accompanies the disease. They are not of any practical interest except in very rare cases.

In speaking of the practice of vaccinating children with pertussis as a therapeutic measure against whooping cough, the author says that this treatment cannot be applied in all cases. In the age when pertussis occurs most frequently the children are already vaccinated in the great majority of instances. A revaccination under these conditions does not give satisfactory results. The author is not an enthusiast on the subject of vaccination in pertussis nor is he one who has nothing but condemnation for this measure. The discussion concerning the value of vaccination as a cure for whooping cough reminds him of the discussion which waged long ago concerning the value of vesication in this disease. In this connection he mentions the fact that in *Hufeland's Journal* for 1841 there appeared an article by Lichtenstein in which this author tried to prove that vesication by means of tartar emetic was as efficient as vaccination in rendering the patient immune from smallpox. The present author asks whether it would not be best to modify the practice of vaccination in pertussis in some way that would render the immunization more prompt and the process less primitive. Inoculations of serum from heifers immunized against smallpox have been tried. According to Violi (*Progrès Medical*, October 2, 1900) these inoculations resulted in a diminution in the number and severity or in disappearance of the paroxysms of cough in from eight to ten hours after the injection. This method should therefore be tried further and its value should be more fully determined.



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ORIGINAL ARTICLES

CLINICAL DEMONSTRATIONS AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

PEDIATRIC DEPARTMENT.

By A. CAILLE, M.D.

CASE I.

THE first case for our consideration is this 5-year-old water-logged girl, who was admitted to the babies' wards in a comatose condition with almost complete suppression of urine from subacute nephritis. She was placed in hot baths and pilocarpine was administered every three hours. Fortunately for the child profuse diaphoresis was soon established. She is losing a large amount of water through the skin and is now passing some water through the natural channels. There has been great improvement. If you meet with a similar case you will remember that in addition to the diuretic action of digitalis you can act upon the skin by means of pilocarpine and hot baths. It has been a question to me whether in cases of malignant scarlet fever where you have a very intense scarlet fever poisoning with no elimination it would not be wise in a desperate case to attempt to eliminate the poisons by giving pilocarpine. We must remember, however, that pilocarpine is a heart depressant—not by any means a safe drug under all circumstances it should be administered together with a heart stimulant. Finally, I will allude to the possibilities of surgical interference in complete suppression of urine. By cutting down upon the kidney and splitting the

capsule, tension is removed and a chance given for re-establishing the function of so vital an organ.

CASE 2.

Meningeal Irritation.—Meningeal irritation in a case of lobar pneumonia. This baby, 16 months old, was brought into the wards the other day with contracted muscles, stiffness of the neck and general tremor, vomiting and high fever (to all appearances a case of meningitis.) Most of these manifestations are present now. You see, for instance, how difficult it is for me to straighten out its hands and feet. In looking the child over carefully we found a dullness in the right apex. This dullness has continued to spread along the right side and we now have a complete consolidation of the whole right lung and all the clinical evidences of pneumonia; the question before us is, are the meningeal symptoms due to meningitis or have we simply a meningeal irritation to deal with, such as is frequently observed in the course of pneumonia? We will try to get nearer a solution of this question by examining the fluid in the spinal canal. You know that is easy for us to remove some cerebro-spinal fluid and it sometimes aids very much in arriving at a correct diagnosis. The patient is placed in the forward bicycle position, and if you draw an imaginary line from the crest of the ilium to the other side your line will cross the interspace between the fourth and fifth lumbar vertebræ. This is the site to be selected for the puncture. As I run the needle into the spinal canal a very clear fluid oozes out, and from the appearance of this fluid, which is probably sterile, it is very unlikely that we have a true meningitis to deal with, probably only an irritation due to the toxins of the pneumococcus. In true meningitis the fluid would not be clear but cloudy. Of course it would not be right to tap the spinal canal as a routine measure in these cases, but occasionally, and if performed in a proper way, tapping will clear up an obscure case and do no harm. The prognosis in pneumonia uncomplicated with meningitis is far less grave than in the complicated condition. Simple pneumonia in childhood is not a grave disease, whereas in adults the heart frequently gives out before resolution of pulmonary consolidation takes place.

CASE 3.

This child 18 months old, came into the wards with a

diagnosis of empyema. Although the colleague who sent the case had punctured the chest in five different places and failed to find pus, still he was under the impression that he had to deal with an empyema on account of dullness over the right lower lobe of the lung with diminished fremitus. After a careful examination and also a puncture we have come to the conclusion that the dullness is due to a partial consolidation of the right lower lobe of the lung, plus adhesions between lung and chest-wall such as are formed in many cases of pleuropneumonia. In the case here presented the case has partially cleared up but the lung is bound to the chest-wall by adhesions and these adhesions are responsible for the physical signs, dullness and diminished fremitus. By proper management, giving the child fresh air to breathe and iodide of potassium internally the lung will probably clear up; the adhesions, however, will remain.

CASE 4.

Paralytic Club-foot.—In this case you can make a diagnosis from a distance. This boy, 11 years old, has a marked paralytic club-foot, the ultimate result of an acute poliomyelitis; it comes on usually at an early age and leaves an atrophied limb and the usual limping gait unless properly managed. Our patient had his attack of acute poliomyelitis at the age of 11 months and he had no treatment as far as we can elicit. His mother states that for a number of years he wore a brace, which seemed to be an impediment rather than a help and it was finally discarded. I know of no brace that would materially help unless it were one with artificial rubber muscles. When we see a baby with acute poliomyelitis we generally, after a few weeks, institute some well directed treatment; we stimulate the muscles by the interrupted current and by injections of strychnine $\frac{1}{100}$ or $\frac{1}{50}$ grain two or three times a day. In the case before you nothing was done and you notice the marked atrophy which extends from the gluteal region downward and has left the limb in a practically useless condition. In some cases of marked contractures the surgeons have, in recent years cut the tendon and made a tendon graft in order to overcome the contracture. In our case there is hardly contracture enough to make it advisable to operate. An ordinary brace would be of no help to the boy, simply, a weight added

to a limb that is practically useless. The muscles have undergone fatty degeneration and the boy, who is otherwise in good health will probably have to limp along.

CASE 5.

Scurvy.—The child on the table is a marked evidence of what is known as scurvy which, in our community is not a very common disease. You will see from the text-books that the principal manifestations of scurvy are painful joints, bleeding gums, hemorrhagic spots and general wasting of the body, all of which are present in the case before you. This child, 7 months old, has been fed on sterilized milk. You will find it stated in some recent contributions to pediatric literature that the sterilizing process is responsible for the scurvy. This is not true—scurvy is a chronic ptomaine poisoning and any kind of food can cause it. It is the expression of continued malnutrition and the continued feeding of something that will not agree with that particular infant. So many statements have been made that the sterilizing process is responsible for the condition that this point ought to be thoroughly understood and brought out. I have recently inquired of Mr. Nansen, the North Pole explorer, whether there was any scurvy among his men during his three years' cruise in the North. He replied, there was not, and gave as his reason that all perishable food which he had taken with him had been sterilized. In former times, when sailing vessels went on long trips, they took along pickled meats and these eventually became spoiled and the sailors got into a condition of chronic ptomaine poisoning from eating the spoiled meat. It was commonly thought that scurvy was due to a lack of vegetables, but a lack of vegetables will not produce scurvy. Scurvy is produced by spoiled meat or milk, or, as already stated, the continued feeding of improper food. We see cases of scurvy in infants at the breast and in infants fed on raw milk or sterilized milk or patent foods. A case of scurvy not too far advanced is easy to handle. The food which the child has been taking should be changed. If sterilized milk has been the food then we should change to raw milk, or milk with cereal or white of egg with a cereal, and, in addition, a little fruit juice. The child should have fresh air, baths, perhaps moderate massage to improve the general circulation and a

good result will be shown promptly. There is no specific medication for scurvy.

CASE 6.

Erythema Multiforme.—Here is another interesting case; it is a peculiar eruption known as erythema multiforme. These cases usually show an endless variety of pictures. They will present an appearance all the way from a fine mottling to a coarse blotchy condition. There is usually but little swelling of the skin. The constitutional symptoms are mild; occasionally you will find a case with a high temperature. The true inwardness of this condition we do not know—intestinal putrefaction with absorption of septic material is probably the cause. I suppose under the circumstances it would be a wise procedure to empty the child's bowels, adjust its diet, give it plenty of water and in perhaps a week all the cutaneous manifestations will have disappeared.

CASE 7.

Marasmus.—Here is a feeble looking child. It is getting ideal food, i.e., the breast-milk, and yet it is going down. I have a little milk tester and will test the mother's milk to ascertain just what the baby is getting. Our tester shows a very watery condition of the milk, hardly 1 per cent. of fat. You know that a good breast-milk should have 4 per cent. of fat, 7 per cent. of sugar and 1 to 1½ per cent. of proteid. With a milk containing less than 1 per cent. of fat it is impossible for this child to thrive. If the mother is able to improve her breast milk by feeding up it would not be advisable to wean the baby. The mother should take eggs and meat and perhaps a bottle of Guinness's stout each day, and feed the baby partly by bottle and partly by breast. Regarding the bottle-food to be given, we shall advise the mother to use a home modification of cow's milk by diluting the top milk which has been standing four hours in a bottle with an equal part of water or cereal decoction, adding a little sugar and salt. Three to four ounces of this diluted milk should be given to the child every four hours and between such feeding the child may be put to the breast. This case is one for dietetic management not for medication.

CASE 8.

Spinal Curvature.—This child, 5 years old, has curvature

of the spine in the upper thoracic region and he has a marked chicken breast. His whole bony formation is rachitic. The spinal deformity is a purely rachitic one and not a tuberculous deformity. A jacket should be applied to support the bony formation and anti-rachitic diet and medication are indicated. It is well-known to physicians that rachitic children with adenoids easily develop chicken breast principally in consequence of mouth breathing. I find on examination that this child has marked adenoids and we shall remove them at once with the curette.

CASE 9.

Chronic Malaria.—This child with chronic malaria I have shown you a number of times. You will remember that we were unable to get the specific effects of quinine by giving it by the mouth, and we finally administered the drug in solution as hydrochlorate of quinine and urea subcutaneously and thereupon the child's specific fever was broken and a complete cure resulted. Some of the injections, although carefully done, produced a superficial sloughing of the skin which amounted to very little and will heal up in a short time. Since leaving the wards of the hospital this child has contracted whooping cough. The attack of spasmodic cough which you notice is now coming on can be checked by pressing forward the lower jaw as you would in a narcotized patient who was not breathing properly. In some children whooping cough attacks are so severe that they will end in convulsions and it is well to know in what manner such an attack can be easily stopped.

CASE 10.

Stricture of the Esophagus.—This little girl, 7 years old, has a stricture of the esophagus and now comes to us once a week to have a sound passed. She swallowed lye some years ago and came to us in an almost dying condition from starvation. By energy and perseverance we succeeded in passing a small caliber sound, eventually larger ones. She is now the picture of health and is able to swallow solids. She is an illustration of what can be done occasionally in such cases. We see many others in which the management is very difficult and not nearly so successful. We seldom get hold of a case soon after the injury but usually after some time has elapsed and an actual stricture of the esophagus is in evidence.

A CASE OF SPORADIC CRETINISM.

By PHILIP F. BARBOUR, A. M., M. D.

Professor of Diseases of Children, etc., Hospital College of Medicine. Louisville Kentucky.

I have the pleasure of presenting before the society to-night a case of sporadic cretinism. The child first came under observation when she was five months of age and showed at that time the typical symptoms of cretinism. The expression was dull, heavy and stupid, the mouth open and the bluish tongue thick and protruding; the lips were thick but the chin was not receding; the nose was "tip-tilted," broad, with large nostrils; the eyes were slanting and far apart by reason of the broad base of the nose, and the lids were puffy; the forehead was wrinkled and the anterior fontanelle unusually large, as was also the head which was brachycephalic. The hair was dark-brown, scanty, rather long, and very dry and brittle. The extremities were short and puffy, but not edematous; the fingers were blunt. The belly was swollen and prominent and an umbilical hernia was present. The appetite and digestion were good though it had difficulty in nursing owing to its thickened tongue. The bowels were obstinately constipated. The skin was dry and scurfy, with spots of eczema upon it, and seemed to be infiltrated with a mucoid substance, so that it was not supple nor thin and pliable like normal skin. The mother said it never perspired.

The temperature was subnormal. When the child cried, with the characteristic hoarse sound, its face, and especially the mucous membranes, became livid. There was no evidence of any lesion of the heart or lungs. No thyroid gland could be felt and fatty tumors were not found about the neck or elsewhere. The mother had noticed these symptoms almost from birth.

The family history is good. There is nothing the matter with the older children who are healthy and vigorous. So far as I could ascertain there had been no cases of cretinism or goitre in the family, and they seem to be free from any other diathesis and from alcoholism. The grand parents were born in Yorkshire, England, but there was no consanguinity. The

parents were born and raised in this country and are sober, respectable and healthy people. They believe that the child perhaps was marked because an idiotic dwarf, possibly an adult cretin, lived next door to them for some time just previous to this conception.

The treatment of the case has been with the thyroid extract. The baby received one-third of a five grain tablet three times a day. Her temperature and pulse were carefully watched and when the temperature rose above normal or the pulse was much accelerated the medication was stopped. She improved rapidly but the tablets had to be discontinued on account of untoward temperature symptoms; after a month's interval they were administered again and this time she has been able to continue their use for three months without any unfavorable symptoms arising. She has taken the thyroid extract in all for about four months with the very gratifying improvement you will notice by comparing her present appearance with the photographs which were taken soon after she first presented herself at my clinic.

The baby is now a year old and while no teeth have been cut the lower gums are swollen and the teeth will probably erupt at no distant date. She can say "mamma" and "daddy" and by her bright expression shows that she recognizes those about her, playing with her little sister and in other ways demonstrating her great and marked improvement. The hernia is cured, the tongue not so thick and not protruding; the skin softer and more pliable, the hair less scanty and more oily, the fontanelle nearly closed. In fact, in practically every respect she shows an amelioration that leads us to hope that by continued treatment she may become almost a normal child. All authorities agree that the earlier the case is seen and put under proper treatment, the more perfect the result and the more satisfactory the mental condition.

The differential diagnosis lies between sporadic and endemic cretinism, Mongolian imbecility, fetal rachitis or achondroplasia and infantilism.

The differentiation from Mongolian or Kalmuc imbecility was rather difficult in this case because it had the typical oblique axes of the palpebral fissures which are so characteristic of the mongolian imbecile, and thick and the protruding tongue and scanty and dry hair which are found in both condi-

tions. But in Mongolian imbecility the skin is soft and not infiltrated, the limbs are small boned; the wrist is small, and the metacarpals very soft from their small size and the laxity of the lig-



After four weeks' treatment.

aments. The fingers, while thick, taper at the point instead of being blunt as in the cretin.

Achondroplasia or fetal rachitis resembles cretinism in the facial appearance, the head being large and broad, with pug nose and some protrusion of the tongue. The essentia



After four weeks' treatment.

characteristic of this disease, however, is the markedly shortened thick limbs and large joints, simulating more the dwarfed

adult cretins whereas these do not appear in the infantile cases of cretinism because they have not had time to develop. In intelligence the achondroplastic infant is like other babies and besides it has the soft skin, delicate hair and the normal temperature of other children. The peculiar curving of the middle and ring fingers away from each other in this disease has been noted by Thomson to whose most excellent work I am indebted for a number of the differential points.

Infantilism as a phenomenon in syphilis has been graphically described by Fournier and in some respects is suggestive of cretinism from the arrested and tardy development of the child. But other symptoms of syphilis will be present and will determine the differentiation.

The sporadic cretin differs from the endemic form of cretinism principally in the fact that the thyroid gland is either atrophied or absent, whereas the endemic variety seems to be connected more or less closely with goitre. Numerous theories have been advanced to explain the connection between endemic cretinism and limestone waters, mountainous regions, etc., but we can state only that in certain portions of the Alps cretinism is endemic and the reason therefor has not been determined.

In Keating's Cyclopeda, issued in 1889, the treatment is recorded in eleven lines beginning with the statement. "When fully developed, cretinism is incurable, etc."

This wonderful improvement is the product of the work of several investigators which may be summed up in a few words.

In 1883, Professor Kocher reported a number of cases simulating myxedema resulting from the removal of the thyroid gland. Further investigators demonstrated that cachexia strumipriva by its symptoms could not be differentiated from cases of myxedema which upon autopsy had been proven to have had diseased or atrophic thyroids. The removal of the thyroid gland from different animals had been followed by a similar train of symptoms. The practical identity of these two diseases and cretinism could be inferred from the marked similarity of symptoms,—“arrested development, large head, thick nose, enlarged lips, coarse body and hebetude of thought and speech.” The practical identity of edemic and sporadic cretinism is also well established not only by the similarity of symptoms but also by the results attained by treatment.

The treatment of cachexia strumaprima at first was by transplantation of the fresh thyroid gland of a sheep. It was usually imbedded under the breast under strict aseptic technique. It was found, however, that very few of these became organized and though they were very effective in ameliorating the symptoms the effects were not permanent, the gland having been largely absorbed without functioning further. From this it was only a step to the use of the fresh glands by the mouth with equally favorable results. But the manufacturing pharmacists have still further perfected the treatment and the remedy may now be exhibited in a most acceptable and palatable form.

There are several features which must be watched in the administration of thyroid extract. With the improvement in the myxedematous condition there is a loss of weight until the mucoid substance has been absorbed from the skin and eliminated. The increased metabolism is apt to produce fever which is a disadvantage and indicates a rapid cell metamorphosis. With the advent of fever the remedy should be discontinued and then its administration cautiously resumed. There is usually a marked increase in height committant with the loss in weight. But when the myxedematous condition is relieved there is again an increase in weight.

The action of the heart is frequently accelerated. With an overdose there are apt to be marked and disagreeable vasomotor symptoms, so that the pulse rate should be watched and the dose increased or diminished accordingly.

Several observers have noted the effect of thyroid medication in increasing the growth of the long bones. In some cases the growth has been so rapid as seriously to impair their strength, and exaggerated curvatures have been the result. It is necessary to continue the observation and treatment of these cases after these cretinous symptoms have been relieved, though it has been found that the occasional administration of a large dose is sufficient to maintain the effect of the medicine.

A satisfactory explanation of the function of the thyroid gland has not yet been evolved and we are unable to explain the action of the extract in myxedematous cases. We can look hopefully to the twentieth century for the solution of this as well as other profound problems of our profession.

Osler has most beautifully summed up the disease in the following citation: "The stunted stature, the semi-besitoid aspect, the blubber lips, retroussè nose sunken at the root, the wide open mouth, the lolling tongue, the small eyes half closed with swollen lids, the stolid, expressionless face, the squat figure, the muddy dry skin combine to make the picture of what has been well termed the Pariah of nature. Not the magic wand of Prospero or the brave kiss of the daughter of Hippocrates ever effected such a change as that which we are enabled to make in these unfortunate victims, doomed heretofore to live in hopeless imbecility, an unspeakable affliction to their parents and to their relatives."

COLDS.

The common cold of childhood is often due to lack or proper clothing. How many children yet unable to creep or walk are allowed to roll upon the floor with scarcely enough clothing to cover their little bodies, while the rest of the family go in and out the doors, allowing the cold air to suck in along the floor, bathe this little innocent in its freshness and cover his tender skin with "goose pimples." Then the father perhaps comes in from the cold, gathers the little one in his arms and goes to the fire to warm, soon again to consign the child to the floor that he may bury himself behind his evening paper.

Again the family must attend the many social functions of the community, and of course the youngest members bundled first are kept in the warm room until the others are ready. By this time the little ones are in a considerable perspiration. The cold air "don't do a thing" to that perspiration. Of course the mother wonders why the child has a cold next day, for she is "sure she wrapped him up warm enough."

Mothers often expose their children dangerously and many times bring on the condition by simply wetting the hair in the daily attempt to "sleek up" the child. The scalp thus moistened, being exposed to a lower temperature, is easily chilled, and a cold results. We all know that frequent dry brushing stimulates sufficient secretion of oil to keep the hair in place and certainly looks much better than the straightened locks after wetting.

The question of dry feet is one too frequently overlooked. I believe that one of the first things taught the child should be to put on rubbers when going out in damp weather. No one thing in my opinion is accountable for more colds in children than damp feet.—Dr. E. D. Brooks, *Medical Counselor*.

SOME CARDIOPATHIES OF THE DEVELOPING PERIOD.*

By ALFRED COTTON, A. M., M. D.,
Chicago.

THERE are two classes of heart lesions, namely, the congenital and the acquired, (or post natal). Of the congenital class Osler makes divisions: Division A.—*Malformations due to faulty development*, concerning which Peacock claims that the mono bi and-tri-locular anomalies are due to influences operating before the sixth week of embryonic life, and that cases showing transposition of vessels, septal defects, etc., are the results of interference from the sixth to the twelfth weeks.

Division B.—*Fetal endocarditis*, which may be due to infection of mother. It is believed that quite a number of common infections may, through the mother, light up a fetal endocarditis. Moncorvo believes these cases to be due almost entirely to maternal syphilis.

Division C.—*Combinations of Classes A and B, or a fetal endocarditis engrafted upon a fault of development.*

The variety of congenital cardiac anomalies is so great that their extended presentation at this time is not possible, but the growing interest in this class of cases will, the writer believes, secure indulgence while he presents post-mortem reports and photographs selected from his case records illustrating each of Osler's three types.

Type of Division A.—*Faulty Development.*

Leroy S., born February 28, 1899; normal labor; mother 23 years old; primipara; a Swede with excellent personal and negative family history; gestation uneventful; a plump, 8-pound boy, apparently normal, except that the color resembled that of a babe of three weeks; during first eighty hours the child rested well, nursing regularly, the skin gradually assuming a dusky hue, which, towards the end of the fifth day, be-

Abstract of paper read before the Society of Internal Medicine, Chicago. Oct. 25th, 1900,

came at times cyanotic. Temperature ranged from 99° to 102.4° F.; respiration from 40 to 80, becoming shallow and irregular after the third day; physical examination of the lungs negative. Pulse from 160 to 180, increasing in frequency towards the last. Second aortic sound highly accentuated; no other abnormal heart sounds.

Death five days and eleven hours after delivery. Clinical diagnosis: anuria, "morbus caeruleus." Extracts from post-mortem report by Professor Hektoen, March 4, 1899. Anatomical diagnosis: "morbus caeruleus." Defective septum between pulmonary artery and aorta. Patent ductus arteriosus and foramen ovale; cyanosis of the skin; sub-pleural ecchymosis; fatty cirrhosis of the liver (probably); uric acid infarction of kidneys and general infection with bacillus mucosus capsulatus. The pericardium is smooth, the cavity containing a small amount of clear fluid. The right ventricle is much larger than the left, which is situated more behind the right than usual. The walls of the two are of about the same thickness. The valves are quite normal, but there is an oval defect about 1½ cm. in its greater diameter between the pulmonary artery and aorta, so that the beginning of the aorta and the pulmonary artery have a common trunk from which emerge in the usual places the right and left pulmonary arteries and the branches of the arch of the aorta. The ductus arteriosus is quite large and fully patent. The part of the aorta distal to this duct is wider than the transverse portion proximal to the duct. The foramen ovale is widely open. The veins, pulmonary and cavæ, are quite normal. The ventricular septum is normal.

Type of Division B.—*Fetal endocarditis.*

Baby G., born March 19, 1900. Weight 19 pounds 4 ounces, length 22½ inches, presenting no external malformations; labor normal; mother, American; primipara, with negative personal and family history. Although the babe breathed well the skin presented a marked pallor which gradually changed to a grayish hue. Cyanosis supervened as a late symptom on the fifth day. On the second day temperature rose to 102.8° F. Pulse 160; respiration 48. Examination showed a loud, harsh diastolic heart murmur which was heard all over the chest. Nourishment was administered with diffi

culty. The child failed steadily; cyanosis developed; death occurred on the fifth day, no urine having been secreted.

Extract from autopsy by Professor Hektoen one hour after death. Diagnosis: chronic endocarditis of aortic and mitral valves (mitral stenosis); defect at base of aorta (aortic regurgitation); hypertrophy of heart; general passive congestion; dilated ductus arteriosus.

Heart is distended with blood and greatly enlarged, especially the left ventricle. The endocardium of the right side is normal. The foramen ovale is patent and the ductus arteriosus is large and widely open. The pulmonary artery is normal. The mitral orifice is small, the auricular surface of the valve is smooth but nodular, and there are delicate but smooth outgrowths and nodules upon the chordæ tendineæ; no ulceration no thrombosis. The aortic valves are large, higher than normal, irregularly thickened, but smooth, there being small, delicate reddish nodules upon them so that they appear somewhat deformed. There are three valves, but the anterior segment is attached to an irregular, band-like bridge 2 mm. thick which extends across an oval depression in the upper part of the interventricular septum and the lower aspect of the aorta, which here presents a marked bulging outward between aorta and pulmonary artery. The bulging is smooth and there is no communication between it and the pulmonary artery or the right ventricle. The interventricular septum is not perforate. The beginning of the aorta is wider than usual but smooth. Coronary openings are normal; coronary arteries are normal.

Type of Division C.—*Combination of Types A and B.*

Edgar L., age 11 years. The patient was a strong, healthy baby until four months of age, at which time he had an attack of pneumonia. The mother positively asserts that he never showed any signs of blueness during these first months of existence. The pneumonia was followed by diphtheria, mumps, measles, bronchitis, pertussis, vericella, typhoid and scarlet fever. He was ill continuously until $3\frac{1}{2}$ years old; did not walk until 4 years of age. Since then he is reported to have grown well and strong and was considered to be as healthy as a child could be. Repeated questioning failed to elicit any information of evidences of cyanosis or edema. The only exception to this perfect health was the occurrence three years

ago, at eight years of age, of a severe and prolonged attack of epistaxis that necessitated plugging of nostrils. Since then slight causes have been sufficient to produce recurrences of the hemorrhage.

Present Illness.—It began gradually the latter part of June with dyspnea on exertion, palpitation, loss of strength and desire to play. No history of tonsilitis, pain in joints, nor any suppurating focus can be obtained. Died in October.

Diagnosis—septic endocarditis with pulmonary stenosis.

Extract from post-mortem report by E. R. LeCount: "The pericardial cavity contains a quantity of clear, opalescent fluid. The heart is enlarged; it weighs 170 gm. Both the mitral and tricuspid valves admit three finger tips. The aortic and pulmonary valves appear competent to the water test. The mitral cusps exhibit no changes. The posterior cusp of the tricuspid valve is thickened along its free margin.

"There are no changes about the aortic valves except that all three cusps show slight fenestration of the margins. Below the aortic valves, in front and above the interventricular septum, is a pouch which easily contains the bulbous tip of a finger and is from 12 to 14 mm. in diameter. At the bottom of this pouch is a small hole through which a probe can be passed into the right ventricle where it emerges just below the stenosis in the conus and just below the tricuspid valve. This pouch lies in the "unprotected space." The endocardium on the septum below the pouch (left ventricle) is thickened and of a whitish color. The right ventricle shows near its upper left-hand corner, just below the pulmonary valve, a stenosis of the conus, which is 14 mm. below pulmonary cusps, of which there are but two. Below these cusps and between the pulmonary valves and the point of stenosis in the conus is a cavity extending outward in the heart wall. It extends for a distance of 3.5 cm. forward and to the right in the wall of the right ventricle. With the heart unopened it lies in front of the large vessels. Its walls are thin and covered with a whitish smooth lining. It is crossed by numerous bands of myocardium which resemble the trabeculæ of the ventricular walls. Among these trabeculæ is a quantity of whitish and yellowish-gray clotted blood somewhat adherent in places and which in some spots leaves a rough surface when it is removed. The wall of this

aneurysmal sac at its thinnest point measures 2 mm. The foramen ovale is closed. The right auricle is dilated and its walls appear thickened. No signs of a ductus Botalli were found, nor any changes in the pericardium nor in the coronary vessels."

The writer reviewed the signs and symptoms of congenital cardiac disorders and quoted Townsend's report of thirty cases with regard to:—

- 1.—Duration of life.
- 2.—Presence or absence of cyanosis.
- 3.—Cardiac signs.
- 4.—Blood findings, and cited his own clinical records upon these points.

Class Second.—Concerning acquired or post-natal heart disorders, he believed their frequency in infancy is not fully appreciated; that their presence is frequently unrecognized in children because:

- 1.—They are not always sought for.
- 2.—The young are examined with difficulty.
- 3.—Lesions are often masked by more obvious symptoms of the primary infectious disorders.
- 4.—The symptoms are often indefinite, merely a listlessness or indifference to play, often only dyspnea or merely tachypnea.

The following points are to be remembered in diagnosing cardiopathies in children:

(A) altered position of apex beat; (b) large normal area of cardiac dullness; (c) change of relations due to rachitic chest; (d) accentuated pulmonic second sound normal in infancy; (e) diagnosis must never be made from murmurs alone; (f) edema may be a symptom but rarely is; (g) absence of ordinary symptoms no proof of absence of disease; (h) compensation is readily acquired in infancy; (i) all tissues and organs adjust themselves to central circulatory disturbances more readily in infancy than in later life; (j) myocarditis is a very common result of the ordinary infections; (k) pancarditis is the rule and not the exception in heart disorders of early life.

Dr. ROBERT H. BABCOCK said that congenital cardiac affections are of interest not only from pathological but also from a diagnostic standpoint, because they are so difficult. It may

be possible for the physician who sees the case from birth to make a rough diagnosis of the existence of a congenital affection, but for the consultant who sees a child years afterward it is sometimes exceedingly difficult. Histories of early infancy are unreliable because of their obscurity. He has seen several cases which he thought were congenital, but owing to the fact that a post-mortem could not be made the diagnosis was not verified. He cited the case of a young woman who complained of rapid heart action. There was a pronounced murmur accompanying the first sound in the mitral area. Over the upper portion of the sternum there was a very peculiar murmur which extended throughout the whole cardiac cycle presenting periods of exacerbation but never wholly ceasing. There was a well-recognized hypertrophy of the left ventricle and hypertrophy and dilatation of the right ventricle. It was diagnosed as a case of mitral regurgitation with probably a patent foramen ovale. The blood examination showed a well-marked chlorosis. The patient died three or four years afterward and on post-mortem there was found stenosis of the aorta just beyond the point where the ductus is given off; a persistent ductus arteriosus; the valves were all intact; the left ventricle enormously hypertrophied; the right ventricle showed no enlargement. That simply illustrates the difficulty of making the diagnosis of what would seem to be such a simple matter as a patent foramen ovale, one of the commonest congenital defects compatible with life. The frequency with which acquired cardiac diseases occur in children is not recognized, because the rheumatism from which they suffer is so atypical, so insidious, that its existence is not suspected. Very frequently the first manifestation is an endocarditis. Objective symptoms are easily recognized, but subjective symptoms are often wanting. It is remarkable how little dyspnea a child will be conscious of, and yet to the observer the rapid breathing gives ample evidence of the cardiac impairment, to say nothing about the tumultuous action of the heart, of which the child is unconscious. Acute myocarditis is also often overlooked in children. We know of nothing that is pathognomonic of it. The instability of the pulse is a very suspicious phenomenon, but if acute myocarditis is overlooked it is not a reflection on the physician, for this disease frequently presents no very manifest clinical features. The prognosis of cardiac disease in

children is serious just as it is at the other extreme of life. Although the heart of a child is capable of wonderful adjustment to difficulty it is, nevertheless, rapidly exhausted. The prognosis is unfavorable also because of the excitable nature of the child. It cannot exert the self-control which is so essential for the preservation of compensation. Furthermore, the heart may rapidly acquire a size far out of proportion to the capacity of the child's chest, thus disturbing the circulatory balance.

Dr. LUDWIG HEKTOEN said, that speaking of myocarditis in children, reference should be made to syphilitic myocarditis in congenital syphilis, as it may be the cause of sudden death. He has had occasion to study two cases of interstitial proliferations in the myocardium due to a congenital syphilis. Dr. Cotton's case of aortico-pulmonary communication is, as far as we know, the first one reported in America and the tenth in literature. In all these ten cases the anatomical conditions were the same. The defect is the result of a developmental anomaly in the septum between the pulmonary artery and the aorta. It is to be distinguished from accidental communications, which are much more frequent and are produced by aneurysms, ulcerative aortitis and similar lesions; also to a persistent, large, and unusually short ductus arteriosus. The sexes are equally represented in these ten cases. The age varies from a few days to thirty-four years. Half of the cases live to be more than four years old. Those cases that live to be older than four years present well-marked symptoms of heart disease which are in no way distinctive of the existing condition. Many of the writers refer to the presence of double murmurs at the base of the heart. Cyanosis was observed in many of the cases but it would be difficult to distinguish between cyanosis due to this communication between the aorta and the right ventricle and that which depends upon failure of union between the septum of the bulb and the interventricular septum.

As regards the second case, while the mitral and aortic valves were irregularly thickened, there is some question as to whether that could be designated as the result of endocarditis. The valves were smooth and the thickening might be due to irregularity in development. There was a bulging at the

junction of the aorta and the interventricular septum and a passage beneath a fully developed anterior aortic valve. In the bottom of this bulging, which is quite aneurysmal in appearance, was situated the opening in the right coronary artery. The smoothness of the wall of this bulging and the perfect condition of the valve seemed to speak against aortitis or endocarditis and in favor of a developmental defect. It is impossible to speak definitely upon this point because lesions in intrauterine life heal perfectly. If the defect is to be regarded as being developmental, how could it be explained. Dr. Hektoen had studied this question quite thoroughly and had arrived at the conclusion that it is the result of defective development in the septum of the bulb which divides the bulb into the pulmonary artery and the aorta, and which, when it unites with the interventricular septum, completes the division of the bulb into the pulmonary artery and aorta and the heart into the left and right ventricle. Two ridges, one anterior and one posterior, help to close the original opening between the two ventricles of the heart. In the case presented there seems to have been delay in the closing of the septum, although the aortic valve developed normally. The embryology of the semilunar valves in the human body has not been extensively studied. We know, however, that before the bulb divides into the pulmonary artery and aorta two endothelial cushions appear—one at the beginning of the ridge which forms the beginning of the septum, and as the septum develops these two cushions divide into two additional cushions, thus giving two on each side. These are subsequently hollowed out and form the leaflets of the semi-lunar valves. Vierordt suggests that this hollowing-out process may spread to the septum between the aorta and pulmonary artery and thus give rise to the aortico-pulmonary communication described in Dr. Cotton's first case. It is, however, difficult to understand how the hollowing-out process jumped from a semi-lunar valve to the wall of the aorta. The same explanation might be applied to the defect in the semi-lunar valve in Dr. Cotton's second case, but it meets with the same difficulty there. Defects in the sputum between the pulmonary artery and the aorta may lead to three conditions:—

- 1.—Communication between the aorta and the pulmonary artery.

- 2.—Communication between the aorta and the right ventricle.
- 3.—Communication between the aorta and left ventricle under the semi-lunar valve.

Dr. GEORGE W. WEBSTER said that congenital endocarditis occurred with great frequency without exhibiting any known symptoms of reasonable evidence of rheumatism on the part of the mother. These cases of fetal endocarditis involving usually the right side of the heart, contrasted strongly with the acquired endocarditis which involves the left side of the heart. The explanation of this probably lay in the fact that the various micro-organisms capable of producing infection and inflammation develop more readily in the venous blood in the left side of the heart after birth, and just as readily in the venous blood found in the right side of the heart previous to birth. It was well known that in cases of congenital or fetal endocarditis they are very prone to attack the pulmonary orifice.

In regard to the diagnosis, he had had three cases under his observation during the last two years and in all of them one of the notable points was the increase in the percentage of hemoglobin, as high as 120 in one case. Another feature was the impaired physical and mental development. One of the patients, a boy of 11 years, was not larger than a boy of 3½. His intellectual impairment was so great that up to that time he had not been able to memorize all of the alphabet. He would learn three or four letters a day, remember them for that day, but promptly forget them by the next day. He slept most of the time. The cyanosis in all his cases had been more marked than occurs in any acquired disease of the heart where any other than the pulmonary orifice is involved. He attributed the cause of this to the lessened tissue change which is present in these cases, as evidenced by both physical and mental impairment.

These cases probably terminate earlier because of the condition of the heart, the impaired circulation and the deficient aeration of the blood. Another reason was that while any defect or deformity or disease of the other valves of the heart rather protects against a pulmonary tuberculosis with the possible exception of mitral stenosis, stenosis of the pulmonary

orifice predisposes to pulmonary as well as to general tuberculosis, from which these patients are very liable to die.

Dr. ISAAC A. ABT, when examining the hearts of newly born children, had occasionally heard a murmur over the upper portion of the sternum, which disappeared after four or five days. He came to the conclusion that it was due to the temporary patency of the foramen ovale. Rauchfuss and Hochsinger say that accidental murmurs never occur in children under three years.

Dr. J. M. PATTON thought that murmurs ought to be classified, as has been done by several English writers, into those which are due to errors of development and which antedate the period at which the specialization of organs occurs and which embrace errors of development, as acardia, dextrocardia, etc., including probably transposition of the two great arterial trunks and murmurs due to lesions occurring after the specialization of organs has taken place. These conditions may be called pathological, whereas the previous ones belong to the department of teratology.

Under the second class we can take up Osler's classification: defects of the septum, ventricles, auricles, anomalies of the valves and all the conditions he describes. The most common result of fetal endocarditis is undoubtedly stenosis of the pulmonary artery or the cone of the right ventricle. Rauchfuss claims that in the absence of congenital malformation disease of the left side is just as common as of the right. Bouchard claims that all these lesions are due to fetal endocarditis. In regard to the marked degree of hypertrophy of the right side of the heart we must remember the increased pressure the right ventricle is working under. The septum in its development is sometimes disposed so far to the left as to open a direct communication between the right ventricle and arterial bulb. The most experienced clinicians have for the last few years dwelt on the development after birth of endocarditis and pericarditis. The preference is generally given to pericarditis. Sturgis says that pericarditis in children is always accompanied by endocarditis, and that endocarditis in early life is certain to bring about a pericarditis. There is a good deal of difference of opinion as to the occurrence of

functional murmurs. Senator thought they were frequent; Trousseau thought they might occur; Jacob did not think they were frequent. We must remember that cardiac cavities develop more rapidly in size than in thickness; murmurs occurring under those circumstances should not be considered as functional. If the child is vigorous murmurs are not often heard except when the pulse is for some reason rapid, when the murmur might be regarded as a functional one unless there were distinct evidences to the contrary. Inflammations of the heart are not at all uncommon in children who have had rheumatism; according to statistics, 50 to 80 per cent. Cyanosis occurs most often with stenosis of the pulmonary artery. The cause has been attributed to mixture of the blood but it also occurs in cases in which there is no admixture. Reeves attributed it to want of oxygenation, which probably has something to do with it. The diagnosis of these lesions is extremely difficult. It is possible to map out the heart and tell whether a murmur is present, but is exceedingly difficult to tell what causes that murmur. We can only conclude that it is a case of congenital disease of some kind.

Dr. HAROLD N. MOYER said that during the last fifteen years Rush has had over 1,000 cases of chorea in its clinic. They were surprised that their proportion of heart complications was less than that stated by most authorities. The examination of the heart was rather perfunctory at that time and when more careful examination was made they found a much larger number of heart complications than is usually stated by authorities. It is extremely difficult to impress students and assistants with the necessity of correctly examining the heart. They always want to use the stethoscope first instead of inspecting, palpating and then listening.

Dr. WILLIAM J. BUTLER did not agree as to the difficulty of diagnosing congenital heart lesions. Dr. Cotton made some diagnoses and they were proven correct on post-mortem. The presence of a heart murmur in an infant immediately becomes significant of a congenital heart lesion. It is not so difficult to diagnose lesions that comes to one's notice later in life, as is generally conceived. The most frequent lesion is that of pulmonary stenosis, whether it involves the pulmonary artery

the conus or the valves themselves. The symptoms and signs are occasionally so strikingly typical as to be easily diagnosed. Cyanosis is very characteristic but is not always present as in one of Dr. Cotton's cases. The absence of cyanosis was undoubtedly due to the anemic condition of the child. In these pulmonary lesions there is invariably a murmur, sometimes so marked as to be heard some distance from the chest. The murmurs are usually accompanied by a marked thrill and are heard and felt most distinctly over the pulmonary area. In stenosis of the aorta the carotid and radial pulses are exceedingly small, in striking contrast to the marked pulsation of the arteries in the lower part of the body. In regard to the relative frequency of endocarditis on the left and right sides of the heart it would be difficult to distinguish between a congenital and an acquired heart lesion.

Dr. COTTON in closing said that there seemed to be a tendency to put rather a sombre shade upon the prognosis of these cases. He thinks that the prognosis is rather more hopeful in children than in adults because in the growing period the natural forces come to the rescue and compensation is, therefore, more readily established. He believes that lesions disappear. We must not accept the dictum that there are no cases of functional or accidental murmur in children under three years of age, although the consensus of opinion seems to be that they are very rare.

DIPHTHERIA.

Dosage of antitoxin: In a severe case Dr. McCollom gives 4,000 units at once. This is repeated every four to six hours until the patient begins to improve. Children under five receive 3,000 units, but above that age 4,000. To one man critically ill 8,000 units were given at one time. The man recovered.

The mortality from diphtheria at the Boston City Hospital before 1895 varied for a series of years from 50 to 46 per cent. At the South Department two years ago it had fallen to 12 per cent, last year it was 10 per cent. As a result of his experience with more than 6,000 cases of diphtheria Dr. McCollom recommends the use of large doses of antitoxin.—*Boston Med. and Surg. Jour.*, Nov. 8, 1900.

EDITORIAL COMMENTS

“An Experimental Study of
Oxaluria”

A valuable and important paper with this title, by Dr. Helen Baldwin, of New York, appeared last year in the *Journal of Experimental Medicine* (vol. v, No. 1, 1900). The work was done in the laboratory of Dr. C. A. Herter, of this city. The conclusions reached are of permanent significance, and inasmuch as the original article has not come to the eyes of the profession at large so much as to the smaller body of scientific workers, we think we shall be doing a service to our readers to abstract the paper at some length. The work aimed at was to ascertain:—

1. Whether oxalic acid is ever *formed* in the animal body.
2. What effect oxalic acid in foods has on the amount excreted in the urine.
3. In what measure oxalic acid in the system is responsible for the symptoms usually attributed to “oxalic acid diathesis.”

To meet the first question the ordinary foods were classified by the writer (partly by her own experiments, partly by the work of Esbach and Auerbach) as follows: (a) Foods containing oxalic acid in large amount, and (b) those containing little or none. To the former class belong spinach, rhubarb, dried figs, cocoa, tea, coffee, pepper, potatoes, beetroot, green beans, plums, tomatoes, strawberries; to the latter class meat, milk, eggs, sugar, butter; corn, wheat, rye, oats (as flour); peas, asparagus, cucumbers, mushrooms, onions, lettuce, rice, cauliflower, pears, peaches, grapes, melons.

Preliminary to analytical work on urine the methods for the quantitative estimate of oxalic acid were examined, and the process described by Dunlop in 1896 (*Journal of Pathology*

and Bacteriology) was finally chosen as most satisfactory. The author observes that all the processes are "long and tedious, and unless great care is used, are liable to large percentages of error." Dunlop's method depends essentially on the fact that calcium oxalate is precipitated from acid solutions by strong alcohol. As described, the process requires five or six days for completion of a single analysis. For a control, known amounts of oxalic acid were added to urines already analyzed; it was found that with proper care the entire amount added could be recovered within about 1 mm.

The daily excretion of oxalic acid in health on a mixed diet has been estimated by Fürbringer at 2 cg. A large series of experiments by Dr. Baldwin seemed to show that the amount varies from this figure as a maximum to even as small amounts as 3 or 4 mg.

Another statement of Fürbringer's, that the number of crystals of calcium oxalate precipitated in the urine bears no relation to the amount in solution, was fully confirmed. The reason for this, as also in the similar case of uric acid, has never been ascertained.

"In almost every case when a patient was placed upon a diet free from oxalates the oxalic acid disappeared from the urine," or was present only as a trace. Several, however, of the patients examined continued to excrete oxalic acid in appreciable amounts. Some of these had prolonged absence of HCl from the stomach. Dogs fed for several months on glucose alone also excreted oxalic acid. The last facts prove pretty conclusively that oxalic acid is at least sometimes formed in the animal body.—Further experiments tended to show that the oxalic acid so formed was due to intestinal fermentation and not to defective or deranged tissue metabolism; and that a sound human organism will probably not elaborate oxalic acid in either tissues or alimentary canal.

As to the second point, it was found that a portion only of the oxalic acid ingested with foods is excreted by the kidneys.

Some of that lost is probably oxidized, the rest doubtless escaping with the feces.

In respect to the third question, it was well established that oxalic acid is only a poison when taken in concentrated form and acting as a gastric irritant. In sufficient dilution ammonium oxalate was given after meals (20 to 50 cg. daily) to two healthy men for two weeks each. One had polyuria, the other no symptoms. The amount of oxalic acid in the urines was not increased with either subject.—Similar experiments of other observers are quoted and attention called to the common practice early in the last century of putting oxalates into lemonade. The answer to the third question therefore is that "the symptoms attributed to an oxalic acid diathesis, with the exception of those due to local irritation in the genito-urinary tract, do not appear to be due to the presence in the system of soluble oxalates, but are more likely to depend on other products of fermentation and putrefaction." B.

FRENCH METHODS TO INCREASE BIRTH-RATE.

The proposed tax on bachelors and old maids and upon childless couples in France will, if carried out, be an interesting experiment. If it succeeds in arresting the decrease of the birth-rate it will show the possibility of the more economic method. In any case it is the pecuniary consideration that is involved; if the thrifty French peasant, who, under the bounties for children is a regular proletarian in Canada, can be made such in France by the reversed inducement by fines, the problem is solved. The question is essentially an economic one, but it has some medical interest also, and the experiment if tried will be worth watching.—*Journal American Medical Association.*

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting October 9, 1900.

The President, Dr. ALFRED STENGEL, in the Chair.

Dr. W. O. XANDER presented two patients who had been the subjects of what was thought to be **Infectious Nephritis Secondary to Mumps**. They were cousins who were living together under the same circumstances; both were about eight years old; they had measles and whooping cough some time before, but there was no history of scarlet fever and absolutely no evidence of recent scarlet fever at the time of their illness. One boy was seen when he had been sick for about a week. He had severe general edema; his urine contained one-third of albumin by bulk, free blood, and epithelial and blood casts. No cause of the nephritis was evident. A week later the cousin was taken sick with similar though milder symptoms. Investigation at this time brought out the history that both the boys had had mumps a few weeks before, and that there was a local epidemic of mumps in the neighborhood. Both boys did well under treatment, one regaining entire health and the other seeming well excepting for the persistence of slight albuminuria.

One boy had enlarged cervical glands and adenoids.

Dr. J. P. CROZER-GRIFFITH.—On considering these cases I think the chief point is to determine whether the illness which they had had previously to the nephritis was actually mumps. I do not think it is possible to make a definite diagnosis of mumps from the history. The laity are likely to consider any acute illness with swelling of the glands about the jaw mumps, but for my own part I have always found that the diagnosis of mumps was likely to be a very difficult one even when the case is actually seen, since other conditions so frequently simulate mumps.

Dr. A. A. ESHNER.—I merely wish to make a point with regard to the nomenclature of this affection. The cases are reported as instances of infectious nephritis, but it seems not unlikely, as in other infectious diseases, that the renal disturbance might be attributable to the action of the toxic products of the bacteria that may be presumed to be the cause of the primary disease. It would therefore perhaps be more appropriate to designate the condition toxic nephritis or parainfectious nephritis.

Dr. W. M. WELCH.—Dr. Griffith has stated what I chiefly wished to say, and that is that I think the diagnosis of mumps is not clearly established. I have never seen nephritis as a sequela of mumps and such an occurrence is undoubtedly extremely rare. I should be very much interested in hearing from Dr. Xander whether they were any conditions in these cases which suggested the possibility of previous very mild scarlet fever.

Dr. W. O. XANDER.—As far as the question of scarlet fever is concerned, I investigated carefully for any history suggesting this, and examined the boys with care for the presence of desquamation. There was no suggestion of desquamation even between the fingers and I think I excluded scarlet fever positively.

Dr. MACLACHLAN showed a case of **Congenital Syphilis**, giving the following history:

It was noted that the infant at birth had a very small right eye, surrounded by a pale pink zone and two capillary nævi. Four days after birth a small superficial ulcer was noticed at the right angle of the mouth, and about the same time the right eye became inflamed. The child was presented at the St. Christopher's Hospital Dispensary five days later, at which time it was noted that the ulcerative process had involved all the tissues of the lower third of the upper lip, and had extended to the median line. There had been progressive but less rapid extension of the process up to the time of the report, which is the twentieth day of its existence. Numerous mucus patches had been present constantly on the hard and soft palate and on the buccal mucous membranes. When shown,

there was a superficial ulceration on the right eyelids, the eyeball was congested and sunken and the bulbar conjunctiva swollen. The cornea was one-third the normal size but apparently clear. There had been an extensive papular eruption over the buttocks and about the anus, the papules being surrounded by an erythematous base. There were no other evidences of congenital syphilis. The mother had eight living children, including the present one, and two miscarriages. There were no lesions of the mother's nipples. Treatment by mercurial inunctions has not improved the condition. Cultures from the lesions showed staphylococci and streptococci.

Dr. SCHAMBERG.—It does not seem to me that this child is in reality affected with syphilis. Ulcerative syphilitic lesions are extremely rare at birth, and when syphilis exists in the new-born we expect to find secondary lesions, not tertiary. To be sure there are rare cases of precocious syphilis which manifest symptoms early, but this case does not appear to me to belong in this category. One feature of the case is most striking and suggestive, and that is that all of the lesions are unilateral, i. e., limited to the right side. There is a large vascular nævus on the right side of the face, there is a right-sided microphthalmos, there is an ulceration at the angle of the right eyelid, there are several ulcers upon the right side of the hard palate, and the large destructive ulceration upon the lip is limited to the right side. It would seem to me therefore that the lesions are tropho-neurotic in character, somewhat analogous to the localized gangrenes that occur in herpes, zoster, leprosy and other neurotic conditions. It is also possible that the ulcerations are the result of an infection, such as is seen in varicella, gangrenosa, or cancrum oris, but in view of the one-sided distribution this is less probable. The child is fairly well nourished and does not appear to be gravely ill. In view of the above considerations I should not regard the case as one of syphilis.

Dr. STENGEL.—I saw the case some time ago through the courtesy of Dr. MacLachlan, and being in some doubt myself, asked permission to have Dr. J. Wm. White see the child. Dr. White was quite positive in his statement that the lesion was syphilitic. I confess that it seemed to me at that time that it

was most probably of that nature. I was led to this view largely by the fact that the spots in the mouth looked exactly like mucous patches.

Dr. EDSALL.—I agree with Dr. Schamberg in believing that the lesion is not syphilitic. The very early age of the child, its relatively good physical condition and the absence of any typical syphilitic lesions makes syphilis seem improbable.

Dr. THOMPSON S. WESTCOTT presented a method for the differential modification of the proteids in percentage milk mixtures.

Dr. J. P. CROZIER GRIFFITH.— I wish to say that while Dr. Westcott's formulæ do appear very complicated I consider his work upon the question extremely valuable. I hope that, in order to make it useful for practical work, he will elaborate it, and prepare for us formulæ for various strengths of mixtures, worked out after his plan, in such a form that we might carry them with us and merely refer to them in order that we might prescribe the proper amounts of milk, cream, whey, etc. There is no question in my mind that whey is a much neglected infant food. Before I studied medicine and even while I was a student, whey was, both in lectures and in text-books, a food much recommended. Since that time it has gradually disappeared from writings to a very considerable extent. I have used it with constantly increasing frequency and have found it very valuable.

Dr. MAURICE OSTHEIMER reported a case of **Fatal Intestinal Hemorrhage** without known cause in an infant of five months.

From birth on the child failed to thrive. His mother died of sepsis. History showed no syphilis, tuberculosis or hemophilia. At 5 months signs of anemia and marasmus were distinct. Suddenly he had three successive hemorrhages from the bowels and died. The autopsy showed only faint congestion of the mucous membrane and solitary follicles of the intestines; this was slightly more marked in the colon; there was no ulceration. Four somewhat similar cases were found in the literature of the past ten years.

Dr. J. P. CROZIER GRIFFITH.—In the case reported I had thought I might find a tuberculous ulcer upon autopsy or possibly a mesenteric thrombus. In the instances of marasmus in which the gastrointestinal symptoms are not marked we are accustomed to suspect either tuberculosis or congenital syphilis. Tuberculosis was absent here and hence we are thrown back upon the possibility of congenital syphilis being the cause of the hemorrhage. That syphilis causes very marked changes in the blood vessels is, of course, well recognized, but there was nothing like a rupture of blood vessels evident in this case, and if vascular changes had occurred they were not evident upon examination. In fact no cause at all was discoverable.

Dr. A. A. ESHNER.—I would ask whether the case could not be considered one of hæmophilia; whether there is any history in the family that would suggest this affection. A case that I have recently had under my care makes it seem not improbable that a diagnosis of local hæmophilia might be made. The case was that of an unmarried woman who had repeated hemorrhage from the bladder with other symptoms of renal calculus. Operation was undertaken but no calculus could be found. The patient afterward passed some small, firm concretions consisting chiefly of blood-clot. The actual cause of the condition remained unexplained, but it seemed probable that it was one of renal hæmophilia.

Dr. OSTHEIMER.—As to the possibility of hemophilia, I would say that I investigated this point carefully as far as I could. There was certainly on the mother's side of the family no history of hemophilia.

Dr. J. H. JOPSON reported a case of **Stricture of the Larynx Following Intubation for Laryngeal Diphtheria** and exhibited the specimen.

The patient was a boy aged five years who had been a patient in the Municipal Hospital and later in the Children's Hospital. The tube had been retained in the larynx for forty-five days, being frequently coughed out, auto-extubation as well as instrumental extubation always being followed by return of the stenosis. At the end of this time he was able to breathe without the tube, but a stricture developed. for which

he was admitted to the Children's Hospital about nine months later. At this time he suffered from attacks of severe dyspnea and examination of the larynx showed a stricture which did not admit the smallest intubation tube. After failure of several attempts to intubate Dr. Wharton performed tracheotomy. The child did well for several days but then developed measles and died. The larynx when removed was found to be the site of a cicatricial stricture, extending from below the vocal cords to the site of the tracheotomy wound just below the cricoid cartilage. The wall of the larynx was much thickened, very firm, and the lumen admitted with difficulty a grooved director. The stricture of the larynx was in all probability a further stage of the same pathological process which was responsible for the retention of the intubation tube.

John Rogers has recently published a paper in which he shows the resemblance of the pathological findings to those present in cases of retained canulæ after tracheotomy and believes the process to be especially one of submucus infiltration and chronic inflammation arising independently of the operation. In the present case there seemed to be a true cicatricial stenosis. Treatment of retained intubation tubes by tracheotomy is unsatisfactory. O'Dwyer's special tubes often answer mild cases. Northrup recommended to Dr. Jopson in a personal case the prolonged retention and careful changing of a proper sized hard rubber tube. Rogers has had excellent results in obstinate cases by prolonged intubation with tubes as large as could be introduced without undue force. When, owing to cicatricial contraction, intubation is impossible, as in the present case, tracheotomy with dilatation from below and later from above would be indicated.

Dr. WELCH.—In our experience at the Municipal Hospital we have frequently met with difficulty in getting along without the intubation tube when removed after the usual period of six or seven days. When reintroduced and worn for four days longer it may often be dispensed with, but not infrequently its removal and reintroduction have to be kept up for three weeks longer before the patient can do without. Some cases become so troublesome that tracheotomy is resorted to. Our experience, however, with tracheotomy, as a secondary operation, is not very encouraging.

The stenosis in these cases is doubtless the result of the formation of cicatricial tissue. It is possible for small ulcers to form in the larynx in consequence of wearing the intubation tube. I have seen these ulcers in three different parts of the larynx—just underneath the epiglottis where the flange of the tube presses, a little lower down where pressure is made by the bulge in the tube and at the lower extremity of the tube. I think it is not impossible for cicatricial tissue to result from necrosis of the mucous membrane and involvement of the submucous connective tissue incident to the diphtheritic process. Whether the difficulty in the class of cases to which the one under discussion belongs is due to injury caused by the intubation tube or is the result of necrosis caused by the diphtheritic process I am not quite sure.

Dr. JOPSON.—It is quite possible in many of these cases that even ulceration is not due to the pressure of the tube. That ulceration is comparatively common is shown by Bokai's report of ulceration in 21 out of 46 cases which died after intubation was done. The tube had not been left in for an unusually long period in most of these cases, and consequently it seemed that the ulceration bore no direct relation to the prolongation of the pressure from the tube. I do think, however, that the tube sometimes causes ulceration. I have had one case under consideration in which this seemed probable.

Dr. Geo. Y. Moore, of Cuthbert, Ga., writes that he feels satisfied that practically the same conditions result from a long and aberrant clitoridal prepuce in girls as Dr. Blue detailed as occurring in boys. (*vid* PEDIATRICS, vol. xi, No. 5, p. 166. March 1, 1901). He strongly advocates that surgical attention be more frequently directed towards this organ.

FOREIGN PEDIATRIC JOURNALS.

**Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.**

DIETSKAYA MEDITSINA, No. 4, 1900.

1. **Hydrocephalus and Serous Meningitis.** By Dr. V. E. TCHEROFF.—Whytt, in 1768, and later Goelis, were the first to describe acute hydrocephalus. After a time physicians began to distinguish an acute and a chronic form of this affection. The latter was regarded as an ascites of the brain, the result of dropsy of the body as a whole. Quin, in 1779, was one of the first to say that acute hydrocephalic effusions are due, in the majority of cases, to inflammatory processes in the pia mater. Since then most physicians have believed that acute hydrocephalus is nothing more or less than an accumulation of serum in the brain cavity, although sometimes no lesions can be found on the brain-membranes. Thus, in the sixties of the nineteenth century acute hydrocephalus was considered by many to be synonymous with serous meningitis.

It is difficult to say whether the expressions acute hydrocephalus and serous meningitis should be considered as interchangeable terms, because we do not as yet see clearly the relation between the clinical phenomena of acute hydrocephalus and of serous meningitis, and the lesions which result therefrom. Many authors describe under the designation hydrocephalus acutus or meningitis ventriculorum affections accompanied by effusions of fluid into the cerebral cavities, no matter what the nature of the fluid may be. And yet a great deal depends upon the nature of the fluid as regards prognosis. Acute hydrocephalus or ventricular meningitis is considered in most text-books as a disease with very unfavorable prognosis; in fact it is generally stated that the disease terminates fatally in a short time in most cases. This is probably true of the cases in which there is a seropurulent exudate. On the other hand, the cases with simple serous effusion usually recover. It is therefore very important to distinguish between these classes of cases, and in the opinion of the author, the only cases to which the name serous meningitis may be applied are those in which the exudate is purely serous.

Quinke was one of the first to distinguish serous meningitis as a separate morbid entity, distinct from acquired primary acute and chronic hydrocephalus and from acute exacerbations of congenital hydrocephalus. At present it is best to regard serous meningitis as a clinical type of the disease, not as a separate morbid condition with its own symptomatology, corresponding to a definite set of lesions. The conception of serous men

ingitis as a part of what we understand in general as "hydrocephalus" will become clearer when we shall have studied the central nervous system as regards the changes which accompany both acute and chronic hydrocephalus. The author reports three cases of serous meningitis in children. In concluding the article he says that as yet the theory of a serous meningitis as a disease distinct from acute hydrocephalus must remain without proper basis. He believes, therefore, that it is correct to call serous meningitis only these cases in which the exudate is serous and not purulent. This term may be applied with this single condition to a case without reference to the height of the fever or to the amount of fluid in the ventricles. The treatment which he employed gave satisfactory results. It consisted in the use of warm baths at 29 to 30° Réaumur, given once daily, and of the administration of sodium iodid in fairly large doses of from 20 to 30 grains in twenty-four hours. In the periods of excitement chloral hydrate gave the best results. Whether lumbar puncture is valuable as a means of getting rid of the fluid in the ventricles is a question of great importance. The author seems to think that puncture is beneficial in cases in which the fluid grows in amount and will not become absorbed fast enough. In acute cases it will not do to hurry with the puncture, as even if the fluid is removed it will collect again so long as the hyperemia or the inflammatory process persists.

2. **The Action and the Indications for the Use of Digitalis in Children with Healthy Hearts in Connection with the Peculiarities of the Child's Organism.** By Dr. L. M. LAPINER.—The author thinks that the anatomic and physiologic peculiarities of the child's organism permit a wider application of digitalis in therapy than is the case in adults. The use of digitalis is limited in adults as well as in children, because this drug is indicated in comparatively uncommon heart affections. In childhood, however, it may be used with great benefit in affections which have nothing to do with the heart and in the present article the author deals with the use of this drug in children whose hearts are perfectly normal. A peculiarity in the innervation of the heart in children is the insufficiency of the inhibitory action of the vagi. The action of therapeutic doses of digitalis in children will therefore depend on the effect of this drug on the muscular fibers of the heart and on the sympathetic nerves which supply that organ. The influence of the latter on the heart is less marked in children than in adults. Consequently digitalis will produce in children an increased force of the systolic contraction without slowing the rate of the heart-beat. The effect of the drug on the arteries and capillaries increasing the blood pressure by narrowing the vessels is also of great value in children. The blood pressure of the "greater circulation" is considerably lower in children than in adults. In anemia in children it is often difficult to bring the blood up to the normal standard, because the general nutrition of the tissues and the metabolic processes are insufficient in anemic children, the more so because of the low blood pressure. Jacobi therefore recommends the use of digitalis in children with anemia without heart affections especially in rickety children in whom the arteries are abnormally wide and the blood pressure unusually low. Digitalis is also useful in children

whose retroperitoneal and mesenteric glands are swollen; for these glands play an important role in the absorption of the chyle. The symptoms of obstruction which accompany such swelling of the abdominal glands are difficult to treat without digitalis, which raises the blood pressure and thereby increases the absorptive power of the tissues. Children bear digitalis very well indeed. The best mode of administration is to dissolve the extract of digitalis in water, according to Jacobi.

3. Concerning the Treatment of Noma. By Dr. R. E. SCHWEITZER.—The author gives a critical review of all the methods employed in the treatment of noma, and gives the results of his experience with a method introduced by Kissjel. This procedure consists of the following steps: The gangrenous tissues are completely removed; the affected surface is scraped with a sharp spoon and washed with hot solution of boric acid or permanganate of potassium. The ulcer is then thoroughly rubbed with iodoform, and a dry dressing is applied. If all the gangrenous tissue cannot be removed at once the ulcer is rubbed with iodoform and covered with small pieces of gauze soaked in a 1:1000 solution of potassium permanganate. The scraping is repeated on the following day and the procedure is repeated until all the gangrenous tissue is removed. Then iodoform is rubbed into the ulcerated surface once or twice daily and the ulcer is washed with permanganate until it is closed by healthy granulations. Especial attention is paid to the diet and to the disinfection of the air of the sick-room. The children are forced to take nourishment by every possible means. The author reports eleven cases of which ten recovered. Before the adoption of the above method of treatment two cases out of three terminated fatally.

4. A Case of Multiple Neuritis Following Influenza. By Dr. B. N. TSCHERNOVART.—The possibility of this complication in influenza was first pointed out by Remak in 1890. Since then a series of articles have appeared on the subject, giving reports of cases. Yet polyneuritis is a rare complication of grip. The patient whose case is here reported was a boy, aged ten years, who had had a mild attack of influenza lasting three or four days. Three days before admission while walking about the room his legs suddenly gave way and he fell upon his knees. When he was put to bed he was unable to lift his legs. He complained of severe pains in the hands and arms, and did not allow these parts to be touched. Finally he could no longer move his upper extremities. He could scarcely lift his head and it fell back on his pillow as soon as he attempted to lift it. The pain was most intense along the course of the principal nerves of the extremities. There were no contractures nor any rigidity of the muscles; the electric reaction was unchanged, and there was no atrophy. Nothing pathological was noted on the part of the joints. The sensory functions of the skin and the reflexes were normal. The patient improved rapidly from the time of admission. The pains became less marked; the paresis of the extremities gradually disappeared. In a week he was able to stand on his feet. New symptoms appeared at about this time. There was a

paresis of the left facial nerves, which developed as the other symptoms receded. When the facial paralysis disappeared, a slight arrhythmia of the heart, together with a dilation of the heart muscle reaching to the middle sternal line on the right side was noticed. A pneumonic focus appeared in the left lung; it spread gradually with slight rises of temperature, and when the patient was discharged there were signs of the remains of pneumonia. The peculiarity of this case is its benign character and good prognosis.

5. A Case of Persistent Botallian Duct in a Girl Aged Two Years and Seven Months. By Dr. A. KISSJEL.—This malformation is comparatively rare, and especially remarkable when it is present in the pure form, uncomplicated by other anomalies of the heart. In the present instance the physical signs pointing to a persistence of the Botallian duct were: Increased intensity of the apex beat; diffuse *fremissement cataire* along the left border of the sternum; dilatation of the transverse diameter of the heart; dullness above the heart on the left side along the sternum, and increased sharpness of the systolic murmur at the auscultatory point of the pulmonary artery.

6. A Case of Suppurative Pericarditis in a Boy Aged Seven Years. Opening the Pericardium. Death. Autopsy. By Dr. A. KISSJEL.—The initial symptoms were fever, chills, vomiting, headache, restlessness and constipation, and were followed by prostration, dyspnoea and delirium. On examination the outlines of the heart were found to be considerably enlarged; the heart-sounds very much muffled and the apex beat in the fifth interspace, outside of the nipple. The pulse was weak, 136; the temperature was normal. The signs on the part of the heart became worse; the pulse became more irregular and there was a marked febrile movement after the ninth day of the disease. The apex beat could no longer be felt; there were attacks of severe cough, but the general condition of the patient was remarkably good. An exploratory puncture in the fourth interspace on the left side of the chest, one centimeter from the border of the sternum, gave a syringe full of thick pus. On the following day the author, with Dr. L. P. Alexandroff, proceeded to open the pericardium. The incision was made through the soft parts in the fourth interspace, beginning from the edge of the sternum and extending to a distance of four centimeters. A small piece of the fifth rib at its attachment to the sternum was also removed, in order to give better access to the pericardium. The cellular tissue was separated and the pericardium was exposed. On opening the sac, six hundred cubic centimeters of greenish, thick pus escaped together with masses of fibrin. A drainage tube was introduced into the wound. The pulse and dyspnea did not improve after the operation, and the patient died at eleven o'clock in the evening of the same day. The autopsy showed that the left lung was adherent to the anterior wall of the chest by fresh adhesions; that the right lung was surrounded by adhesions, and that the pleura contained but a small quantity of serous fluid; that the lungs were perfectly permeable to air, but somewhat congested; that sections of the lungs showed

drops of pus exuding from the bronchi, and that the pericardium was the seat of fibro-purulent inflammation. It is evident that the operation in this case was performed too late.

7. A Febrile Affection in a Boy Aged Eleven Years, Resembling Clinically Acute Miliary Tuberculosis. Recovery. By Dr. A. KISSJEL.

KINDERARZT, December, 1900.

1. Report of the Proceedings of the Sections on Diseases of Children and School Hygiene at the Seventy-second Meeting of German Naturalists and Physicians, held in Aix-la-Chapelle September 16 to 22, 1900. (Concluded).

2. Association of Physicians of the Lower Rhine and Westphalia. Meeting of April 1, 1900.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, December, 1900.

1. Acid Intoxication in Gastroenteritis of Nurslings. By DR. EUGENE TERRIEN.—It has been asserted by a number of observers that the generation of certain acids is responsible for some phenomena of gastroenteritis. Acid intoxication is, as a rule, accompanied by an excessive elimination of ammonia nitrogen in the urine, and this has been found to be the case in gastroenteritis. By the administration of large quantities of mineral acids, and also of some organic acids, one can cause the almost complete disappearance of urea from the urine, and will note then that the nitrogen occurs in the urine in the form of ammonia salts. In experimental acid intoxication, therefore, there is an excessive amount of ammonia nitrogen in the urine. The same fact was noted in gastroenteritis in nurslings, but unfortunately Bendix has shown that these investigations were of no value, for the urine decomposed almost instantaneously in the vessel in which it was collected, in spite of all expedients to prevent chemical changes, such as ice, chloroform, etc. While it is undoubtedly true that acid intoxication produces an excess of ammonia nitrogen, it is by no means certain that the presence of ammonia salts in excessive quantities in the urine is an indication of the presence of acid intoxication, for this change in the urine may be due to other causes, as for example, the inability of the liver to transform ammonia salts into urea. The author concluded, therefore, that the existence of acid intoxication must be proved by other, more direct, methods. This he did by testing the alkalinity of the blood in nurslings with gastroenteritis. A careful titration was instituted in twenty-seven cases, and the author concludes as follows: The alkalinity of the blood is visibly lowered during an attack of gastroenteritis when the disease lasts a few days. Hence, there must be a relation between acid intoxication and gastroenteric infection. If the case is prolonged, the acidity increases and the

(To be continued.)

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ORIGINAL ARTICLES

SCARLET FEVER.

By F. D. MILLARD, M. D.,
Milwaukee.

SCARLET fever is an acute, contagious, self-limited disease caused by a microbic organism; and is characterized by fever, sore throat and a typical eruption followed by desquamation.

The period of incubation is, as a rule, from two to six days; it may vary from one to eight days and even more; the period of invasion is from twelve to twenty-four hours; that of eruption from four to six days, and that of desquamation from three to six weeks.

The disease may be communicated any time from the first symptoms of invasion throughout desquamation and even during the existence of purulent discharges from the nose or other mucous membranes.

Etiology.—Scarlet fever is the result of a contagion which may pass directly by contact with the person of the sick, or be transmitted by persons in attendance, domestic animals, articles of food, especially milk, drinking cups, etc., and through the air.

Analogy leads to the belief that it is caused by a micro-organism, but as yet its nature has not been proven. Dr. W. J. Class, of Chicago, reports the discovery of a specific organ-

ism—a diplococcus—in the scales of desquamation and secretions of the throat in scarlet fever; previous failure, he claims, being due to a choice of culture-medium. He uses glycerin-agar, to which by weight per 5 cent. of black sterile garden earth has been added. This culture-medium will produce an organism which he believes to be the specific germ. It is a diplococcus resembling a very large gonococcus as ordinarily seen in slides made from fresh cultures. The two segments of which it is composed are very close together and have a biscuit-shape appearance. Whether this is the true specific germ or not remains to be proven by further investigation.

The power of the poison to resist change is very great, and it can easily pass into milk and other articles of food. Recently a sudden epidemic of scarlet fever broke out in Racine, Wisconsin; twelve cases were reported almost at the same time. An investigation by the Board of Health developed the fact that two children of a milkman had been ill with the disease and that the dairyman furnished milk to eleven of the families where the disease broke out. It is thought by some that cows may become infected with the virus. This, however, has not been proven.

The virus adheres to clothing, toys, bedding, letters, furs and furniture with great tenacity. sporadic cases being traced to such causes beyond a doubt. A logging camp that had been isolated from civilization several weeks became infected with the disease, which was traced to a fur cape that had been lying in a trunk for months.

Domestic animals, especially cats, act as carriers of the poison. A bouquet of flowers has been known to convey the disease. The susceptibility of children to scarlet fever is much less than to measles; not more than one-half exposed will take the former, while few escape the latter disease. Both sexes are equally liable. Adults are almost immune after thirty years of age.

Epidemics vary in degree as to the virulence of the germ, the present one being very mild. Some persons and families are more susceptible to the poison than others; two or three died in alarming succession in the same family during one invasion. Scarlet fever is disseminated throughout the temperate zones and is one of the most prevalent of the exanthemata. Although it is a disease of childhood, adults are some-

times attacked. The mortality was higher in early days than now. In 1858 and 1859 it reached 10.4 to 12.6 per cent., since which time there has been a progressive decrease. An epidemic raged in London in 1670 to 1675 which gave Sydenham the opportunity for his classical description of the disease.

Up to that time it was supposed to be a malignant form of measles and was known by such fanciful names as morbilli ignei, rossalia, rubeolas, etc.

This disease is supposed to have first made its appearance in the United States about 1735, and slowly spread through the sparsely settled country.

Less than one hundred years ago Dr. Rush wrote: "No physician would be likely to see it more than once in his life."

Morbid Anatomy.—The anatomical changes in fatal cases are most frequent in the throat and kidneys. The mucous membranes of the pharynx, soft palate and tonsils are swollen and injected—perhaps hemorrhagic. There may be an adherent false membrane due to bacteria; sometimes to the diphtheria bacillus. The kidneys are apt to show an acute nephritis in a mild or severe form, which is parenchymatous, affecting chiefly the glomeruli and convoluted tubules, giving the enlarged white kidney. Granular degeneration of the heart and liver and moderate acute enlargement of the spleen are present. The rash leaves no evidence of its presence in the skin except in hemorrhagic cases.

Symptomatology.—The disease is sudden in its onset, with nausea, vomiting, rapidly rising temperature to 103 or 105 degrees, with attending angina soon followed by the peculiar rash, which first appears on the neck and chest, rapidly spreading over the body. If the case be moderately severe the face will be invaded by the rash and the cheeks have a red flush. In the mild cases, especially of children, the face escapes eruption. In typical ones the rash is scarlet, thickly diffused over the body, and is seen to be made up of small maculopapular points, and as the disease progresses it becomes confluent on certain parts of the body as the arms and chest. In mild cases it is not apt to be scarlet, but a dull yellowish-red color.

The eruption usually appears from twelve to thirty-six hours after the first symptoms of invasion; exceptionally not until the third or even the fifth day. It lasts, as a rule, from

three to seven days; it may last but a day, and sometimes may be so slight as to escape notice. There is more or less itching and burning when the eruption is at its height, and in severe cases considerable swelling chiefly noticeable upon the hands, arms and face. Soon after the rash has failed, exfoliation of the dead epidermis begins, which is very characteristic of the disease. This is known as desquamation and covers a period of two or three weeks before it is complete. It has the same order as the rash, being first seen on the neck and chest, where it appears as fine scales or patches. and in severe cases with abundant eruption the epidermis can be peeled off in strips as though it had been sunburnt.

The tongue is red at the tip and edges, furrowed in the center, and through the white coating can be seen the swollen papillae which give the so-called strawberry tongue. In three or four days this coating disappears; the tongue looks red and the papillae are very prominent, giving what is called the raspberry tongue. The throat symptoms are in proportion to the severity of the malady; from a mild congestion with scarcely any inconvenience to a membranous deposit which may end in sloughing and fatal hemorrhage or become gangrenous. The fever may rise to 107° F. or 108° F. and even more before death takes place. Still, I have the report of a child, eleven years old, recovering after the temperature had risen to 108° F., the patient being in a state of coma. Cold sponging, with baths, and the administration of Antipyrin in seven grain doses; reduced the temperature and the patient recovered.

Complications.—The complications are mild, as a rule, if the disease is of a mild type, but in severe cases they are apt to be very serious; the angina may become malignant, causing death. There may be extreme sloughing, opening of a large blood vessel with consequent fatal hemorrhage, as stated above. The membranous deposit on the throat, adenitis and sloughing are generally caused by the streptococcus; but it is not uncommon for true diphtheria to develop with scarlatina. Middle-ear inflammation occurs in about thirty per cent. of the cases, and a severe suppurative otitis media develops in about $4\frac{1}{2}$ per cent. usually during the stage of eruption, revealing itself by violent earache, insomnia and excessive tenderness of the mastoid process. Multiple abscess,

pyothorax, suppurative pericarditis, endocarditis and certain arthropathies are among the complications. The last have been incorrectly considered rheumatic. The most common form is scarlatinal synovitis, or, as it is often called, "scarlatinal rheumatism," of which there are three forms—a serous exudate, serous exudate becoming purulent, and an exudate that is purulent from the beginning. The first variety is the most common form of the affection. It attacks the joints at the end of the first or the beginning of the second week, and sometimes later on in the state of desquamation, and is usually confined to a single articulation, though several joints may be attacked one after another. The symptoms are pain, redness, swelling and moderate rise in temperature. Recovery in the course of a few days is common in the first variety; recovery with more or less damage to the joint is the rule when the exudate becomes purulent; and when it is purulent from the beginning, death from pyemia is the usual result. Cardiac complications are rare as compared with those seen in patients with genuine rheumatism. Purpura rheumatica is another form of these arthritic inflammations appearing in the second week during desquamation. The joint symptoms are about the same as those just described; but in addition the body is covered with peculiar petechiae first having a scarlet color and then changing to purple and rarely to black. The last form is generally fatal. These peculiar macular spots cover the whole body except the face, and may last for several weeks, appearing and disappearing in irregular crops. The cause of these rheumatic symptoms is believed to be due to the specific germ or its poison. Of all the complications, acute inflammation of the kidneys is the most important. It develops most frequently in the second or third week, but may be delayed to the fourth or even the sixth week. It may follow the mildest form of the disease, as in those cases most of the poison is eliminated through the kidneys instead of the skin. The first evidence is usually an anasarca just below the eyes, which is detected in the morning. This develops into general dropsy, and the urine will be found scanty and highly colored or smoky, denoting the presence of blood. It contains a large amount of albumen and great numbers of casts of all varieties. Edema of the lungs and the glottis may suddenly appear in any case of nephritis and end fatally in a short time.

Diagnosis.—The diagnosis in typical cases is easy. The

sudden onset, history of exposure or prevalent epidemic, vomiting, high fever, sore throat and early appearance of the rash, first on the neck and chest, then spreading rapidly over the body, are all pathognomonic of scarlet fever. The atypical cases are more difficult and sometimes extremely perplexing. Indeed, in some forms of the disease a diagnosis is impossible until a further lapse of time brings out some of the characteristic symptoms, or these may be wanting and the case remain in doubt. The rashes of certain drugs such as Antipyrin, Belladonna, Oil of Copaiba, Quinine and some others resemble somewhat that of scarlet fever, but the absence of fever and sore throat usually makes the differentiation easy.

Acute exfoliative dermatitis may develop without obvious cause, and has a sudden onset, a brilliant exanthem, closely resembling scarlet fever, and a temperature with nervous phenomena, making it impossible at first to differentiate; but the absence of throat symptoms and a peculiar tongue will help to make the final recognition. In the dermatitis, the desquamation affects the nails and the hair.

The prodromal state of measles, with coryza and bronchitis, papular crescentic eruption first appearing upon the face and slowly covering the body, mild temperature of 101° F. to 103° F., and conjunctivitis, render the differentiation not difficult.

Rötheln, or German measles, very often resembles mild attacks of scarlet fever, the rash being small and punctate, spreading quickly and thickly diffusing itself on the cuticle. There is in rötheln, however, mild catarrh as in measles, but it appears later, developing after the rash has faded, continuing during convalescence, and may linger for several weeks in the form of chronic bronchitis. The throat symptoms are wanting; the temperature low, 100° F. to 101° F., and the child is not much indisposed. In short, the eruption is out of all proportion to the other symptoms.

It is always hazardous to make the diagnosis of scarlet fever from the eruption alone, as there are so many skin eruptions which may resemble that of this disease. Digestive disturbances, burns and other septic wounds and drugs will often give rise to such a rash.

Prognosis.—The death-rate in children under one year is very high; it diminishes after the first year until it reaches its minimum between six and twelve years. The prognosis is

grave in proportion to the severity of early symptoms. In mild cases without serious complications the patient is practically well by the end of the first week. A precocious painful swelling of the submaxillary gland is of evil import. The majority of cases of acute nephritis recover under proper treatment, but a complete early suppression of urine is very dangerous. The average mortality in mild forms is three to four per cent., but in a severe and malignant type it may reach 40 per cent. The present mortality of the epidemic existing in Milwaukee and other parts of Wisconsin is about $3\frac{1}{2}$ per cent.

The average mortality of all cases is assumed to be 11 to 14 per cent. It will be seen from these data that a favorable prognosis must be guardedly made.

Treatment.—There is no specific discovered so far. Isolation in a fully ventilated room is the first essential, and all unnecessary articles of furniture should be removed. The disinfection of clothing, bedding, food receptacles, etc., should be carefully directed by the physician. In mild cases the treatment of the patient should be simple; more harm is done than good by overdrugging.

Rest in bed, liquid diet, milk being one of the best, plenty of good water to allay the thirst and eliminate the poison, with some mild cathartic, calomel being one of the best, is about all that is needed. The free use of milk, buttermilk, plain and mineral waters, with some of the potash diuretics, dilutes and weakens the poison and greatly lessens the danger of post-scarlatinal nephritis. For the throat a mixture containing Tinct. Ferri Chlor. is very good. The following answers the purpose very well :

Tinct. Ferri Chlor., dr. 2.

Glycerinae.

Syr. Simplicis āā oz. 1.

Aquae q. s. ad oz. 3.

M. Sig.: One teaspoonful every three hours while awake. Potassium chlorate should not be given internally, as it is irritating to the kidneys. For a mild diuretic there is nothing better than Potassium Acetate. Pot. Cit., Sweet Spt. Nit. or Pot. Bicarb. may be added; but these are not necessary; the Acetate will do the work equally as well alone.

The nose and throat should be kept clean by spraying

with an atomizer or by using the nasal syringe recommended by Holt. Hydrogen dioxide, to which is added four or five parts of water or any mild antiseptic solution will answer the purpose. Gargles should be given to patients old enough to use them. If this is done, the danger of ear complications is lessened and the throat symptoms greatly alleviated. The temperature can be controlled by lukewarm sponging or bathing. It is best to have the water not lower than 90 degrees Fahrenheit at the beginning of the bath, which can be lowered to the desired point by slowly pouring in cold water. Acetanilid, Phenacetin, Salicylate of Sodium or antipyrin may be used with good effect when the symptoms are severe, the temperature high and the patient nervous and restless. Caffeine Citrate should be added to the coal-tar derivatives to counteract their depressing action on the heart. The complications must be treated as indicated. If the heart becomes weak, Strychnin, Digitalis and Alcohol are the best remedies.

The inflammation of the kidneys which is apt to follow this disease is due to the irritation of the toxins eliminated by them. Put these organs at rest as much as possible by rendering their excretions bland. This is done by sponging, warm baths, saline cathartics, milk diet and water with Liq. Pot. Citrat. as a diuretic. Counter-irritation over the kidneys should be maintained with poultices and mustard paste. When the urine becomes scanty and dropsy is marked free diaphoresis should be induced by the hot pack or the vapor bath, and, if necessary, Pilocarpine given hypodermically. Morphin, Atropin, Chloral-Hydrate and Potassium Bromide are the remedies commonly used to control convulsions; also inhalations of Chloroform. Hot mustard baths are important, with cold affusions or ice to the head; but if symptoms are very urgent, nothing is more certain to give immediate relief than venesection. The depressing effect often following this procedure can be mitigated by an intravenous injection of normal salt-solution.

For the relief of scarlatinal rheumatism, Morphin is the best remedy to control the pain, which is sometimes very severe. A Glycerin-ointment, spread thickly on absorbent cotton, wrapped around the joint, and left on from thirty-six to forty-eight hours, has served the writer admirably in this complication; and with this the administration of Sodium Salicylate till the effect of the drug is noticeable.

TWO CASES OF CONGENITAL DILATATION OF THE COLON.

By THEODORE FISHER, M. D., M. R. C. P.,

Pathologist to the Bristol Royal Infirmary, Physician to Out Patients to the Bristol Hospital for Sick Children.

VALUABLE papers have recently appeared on the subject of congenital dilatation of the colon, and the record of a few isolated cases will probably add nothing to the knowledge of the subject.

The following two cases, however, have a curious interest not strictly medical. They were both admitted to the Bristol Royal Infirmary on the same day. That two examples of so rare a disease should be admitted in one day is remarkable. Hale White mentions that at Guy's Hospital no case was met



with in 8,000 post-mortem examinations (Clifford Allbutt's System of Medicine, Vol. III., p. 967).

The following are brief notes of the cases of dilatation of the colon:

Case I.—A male child, aged six months, was admitted into the Bristol Royal Infirmary May 30, 1899, for swelling of the abdomen, which had been present since the child was four weeks of age. The bowels had been constipated and sometimes had not been opened for a week at a time. On admission the child was wasted, but did not appear ill. The abdo-

men was very distended. It measured $23\frac{1}{2}$ inches in circumference at the level of the umbilicus. It was everywhere resonant. Large distended coils were visible, which were thought to be the transverse and descending portions of the colon, and sometimes "huge vermicular movement" was seen on the left side of the abdomen. No obstruction was felt on examination by the rectum.

The bowels were moved seven times during the first 24 hours that the child was in the Infirmary. The fæces were in small, smooth and rounded masses, which were not hard. The bowels continued to be opened frequently without the aid of aperient medicine, and the abdomen diminished in size, five weeks after admission, measuring only 16 inches in circumference. There was, however, no improvement in the general condition of the child. It became more wasted; there were occasional rises of temperature and death took place on August 14th.

At the necropsy the large intestine was found to be greatly distended. The enlargement was chiefly in the transverse colon and sigmoid flexure. The cecum and lower half of the ascending colon were comparatively little affected. There was no obstruction of the rectum or sigmoid flexure. The abdominal organs were removed together and mounted as a museum specimen; consequently, the intestines were not opened. As far as could be ascertained, however, there was no ulceration. The bronchial and mediastinal glands were enlarged and caseous, but the mesenteric glands were not affected. Recent tubercles were scattered through both lungs. There was nothing noteworthy in any of the other viscera.

Case 2.—A female child, aged 13 months, was admitted into the Bristol Royal Infirmary, under the care of Dr. Shaw, May 30, 1899, for acute diarrhœa. Curiously enough, although in the other child the distention of the abdomen had been very obvious, in this case it had not been sufficient to attract special attention. Possibly the diarrhœa had led to diminution in size. The history, however, does not mention that enlargement of the abdomen had been noticed by the mother, but constipation had been present from birth. The child died June 6th. At the necropsy the large intestine was found to be greatly dilated, especially in the transverse and in the descending colon. The cecum and lower part of the ascending

colon were scarcely larger than the normal, and the sigmoid flexure and rectum were little, if at all, dilated. The increased size, however, of the transverse colon was so great that when laid open it measured five inches across. Numerous small ulcers were present in the ascending colon.

None of the other thoracic or abdominal viscera showed anything noteworthy, except the lungs, which contained a few small patches of broncho-pneumonia, so common a complication of acute diarrhœa, which in this case was the cause of death.

I have to thank Dr. Shaw for kindly permitting me to publish these cases, and Mr. E. C. Clayton for the accompanying photograph of Case 1.

VOMITING IN CHILDREN.

R	Potassii bicarb.....	gr. xxv.
	Acidi citrici.....	gtt. xvii
	Aquæ amygdalæ amaræ.....	℥i
	Aquæ destil.....	℥ii

M. Sig. One teaspoonful every time vomiting occurs.—HOLT, *Med. Record*.

HICCOUGH.

Even in cases of the gravest organic lesion, it is sometimes possible to relieve the symptom by some of the following methods: (1) Holding the breath for 15 or more seconds; (2) administration of quick-acting emetics (though too great depression from these must be thought of), or peristaltic stimulants; (3) hot applications over the cervical spine and diaphragmatic area; (4) firm pressure upon the phrenic nerve over the scalenus anticus muscle; (5) rapid swallowing of small pieces of ice; (6) the use of such anti-spasmodic drugs as morphine or chloroform in full dosage (the bromides, camphor, belladonna, valerianates, antacids and musk have been advocated, but are commonly too slow in action for severe cases); (7) traction on the tongue, intermittently applied, as in chloroform poisoning; (8) galvanization of the phrenic nerve; (9) faradization of the epigastric region (Erb); (10) forcible elevation of the hyoid bone by the attendant's fingers (Nothnagel); (11) the method described by Kingscote, in his work on asthma, 1899.—*The Medical World*, November.—*Med. Record*, Nov. 17, 1900.

THE INTRA- AND EXTRAUTERINE PERIODS OF
STRESS AS PATHOLOGIC FACTORS IN
PEDIATRY.*

* Read before the Chicago Pediatric Society, January 3, 1901.

By JAMES G. KIERNAN, M.D.,
Chicago, Ill.

EARLY in the last century Von Baer demonstrated that vertebrate embryos of common type at their origin assume successively a number of common forms before definitely differentiating. Supernumerary organs, as Dareste has shown, exist in these common forms at one phase of embryonic life. A higher vertebrate embryo hence contains in essence the organs and potentialities of lower vertebrates. Under the influence of heredity or accidental defect an organ belonging to another species may develop, or an organ constant in a species may be lacking in an individual. As the organism is a balance not an entity a struggle for existence necessarily occurs between the forces tending to elevate the individual or the race type and the forces tending to cause the organism to remain at a certain point of development. The first force in a general way is summed up in the term heredity. The second force is summed up in the term atavism. Under the law of economy of growth first enunciated by Aristotle and first cleared from obscurity by Goethe, St. Hilaire and Treviranus, if the balance of embryologic development be disturbed a struggle for existence occurs between the organs and even between the cells by which the lower phase of organic development profits at the expense of the higher. Various expressions of this are found—the imperfectly developed uteri, the three-cell hearts, the cloacal persistence and other vestiges of arrested development. Not only may palpable arrests of development occur in structure but similar though impalpable states may occur in structure which prevent proper functioning.

As Havelock Ellis remarks, fetal evolution (which takes place sheltered from the world) is in an abstractly upward direction and further development after birth is merely a concrete adaptation to the environment without regard to upward zoologic movement. This refers more particularly to the

potentialities of development at certain periods which, whether intra- or extra-uterine, may well be called periods of stress. One of the most distinguishable of these is the so-called senile period of intrauterine development, when man most closely resembles the anthropoid apes. The human being may be arrested as to both structure and growth in the upward direction at this period.

Very frequently three extrauterine conditions occur from such arrests of development. Syphilis causes the arrest of development, causing the old-man appearance of infantile syphilis. This is not the result of infection but an arrest of development produced by the toxin of syphilis. Other toxins may produce precisely the same results as syphilis. This is shown in the case of senile dermic changes reported by Souques, Talbot and others. This arrest at the senile period may not show itself in dermic and other palpable states, but in an arrest of development in function which brings about premature senility. The cases of intellectual and sexual precocity so often reported are the expressions of such senile arrest of development. Furthermore, as Havelock Ellis has shown, man in the course of his life falls away more and more from the specifically human type of his early years. The ape in the course of his short life goes very much farther along the road of degradation and premature senility. The ape starts in life with a considerable human endowment, but in the course of life falls far away from it. Man starts in life with a still greater portion of human or ultra-human endowment and to a less extent falls from it; in adult life, approaching more and more to the ape.

Up to birth or shortly afterwards in the higher mammals a rapid and vigorous movement occurs along the line of upward zoological evolution. There comes a time, however, when this fetal or infantile development ceases to be upward, but is so directed as to answer to the life-wants of the particular species that henceforth and throughout life there is chiefly a development of lower characters. A slow movement toward degeneration and senility, which, however, is absolutely necessary to ensure the preservation and stability of the individual and the species. Later on this last movement is changed into two opposing forces which sacrifice this upward movement still further for the benefit of the race. Another important period

of stress is that which occurs during the period before the differentiation of sex. Considered from the standpoint of race-evolution the female type is the highest. Mammals, for example, owe their position in evolution to female sexual characters of which the function of lactation is least female in type, although most evident. The human uterus, for example, passes through all the embryologic phases from the lowest marsupial type to the highest mammal. The other organs pass through stages upward from those of the cloacal type of the oviparous mammal to that of man. Of necessity the local nervous system of these organs as well as the cerebral spinal nervous must pass through similar embryologic states. Any factor which interferes with the proper development at this stage will therefore not only interfere with the development of the sexual organs themselves but with the proper development of their nervous consequences. Arrest of development may therefore take place at any point in the embryonic evolution. The male may preserve only the female breast while normal in other respects; or, again, present cryptorchidism or hypospadias, or sloping shoulders, and be otherwise masculine. On the other hand, his nervous system may have taken such a ply that at the period of puberty the sexual instincts may be female in type. In some instances this may extend merely to an extreme modesty toward males, to an intense liking for female occupations and disgust for male occupations. In the female precisely analogous conditions may occur. In certain cases the sex side is dormant until awakened at puberty. Education of these cases of arrest of development may give the sex direction rather than any in-born tendency. One male who had undergone arrest of development in his evolution toward the female type was brought up as a girl, had unusually pleasing womanly qualities; as a result he was married twice to intensely devoted husbands. The real sex was never even suspected until the necropsy revealed that the supposed woman was a male. In other cases where the nervous system has taken one sexual ply while the body has taken another, an exceedingly unfortunate class of beings results. This class of beings needs especially careful training during puberty and adolescence. In some instances in addition to the sexual distortion there exists in these beings conditions of mental defect and moral obliquity. In the last case they approximate the

criminal type. In some instances no mental defect, nor in a strict sense, moral obliquity occurs. Here the patient requires very careful study from every standpoint. There is in the higher and lower races a tendency in different directions as to the predominance of sex. The women of the lower races more nearly resemble the male of the race. The male of the higher races more nearly resembles in structure the female of his race than does this female the female of the lower race. This is in part due in the course of evolution to the intrusion of the male on female occupation, since all occupations other than war, hunting and fishing were created by women. The male, however, in the higher races while thus taking on the female intellectual and æsthetic qualities retains the male sexual characteristics mentally and physically, but in accordance with the law of evolution these manifest themselves less explosively as in the case of the female. As the victim of masculinism or feminism is a degenerate, the explosive manifestations are more marked.

The child at birth offers a comparatively simple and uncomplicated standard. With its relatively enormous head, its large, protuberant abdomen—"all brain and belly," as some one defines it—its small chest, short, feeble legs, comparatively vigorous arms, smooth, almost hairless skin, large liver, kidneys, thymus and suprarenal capsules, it presents us with a distinct anatomical picture, and the facts of the child's physiological and psychic life are also fairly clear. But the compound standard on the other side of simian, savage and senile characters is much less clearly defined. These become more obvious under the strain of certain periods.

The development of man after birth is marked by periods during which certain ignorant functions are, so to speak, learned by the organs and other functions pass into disuse. These periods may therefore be divided into two classes, those of evolution and those of involution. With the last of these the pediatrician (except indirectly so far as they are related to the first class) has naught to do. The signs marking these periods are sometimes clearly evident, even to the most superficial observer. The first period between birth and the age of two has its obvious feature—the appearance of the first teeth. These, however, are nothing but an expression of the development of the nervous system governing growth. With this

period begins the education of the child as to its relation to its surroundings. This education may possibly have begun before birth, but it is perfected after birth. This period is rarely marked by evidences of mental stress to the ordinary observer. There is no doubt, however, that the complete unity of the mind constituted by balance is often either made or marred so far as its foundation is concerned during this period. Humoring of the child during this period frequently results in an undue development of its egotism, which requires careful training of the subsequent period if it is to be checked at all.

Anger is very early shown in children. During the first two months even the child evinces by movement of its eyelids and hands intense anger when the attempt is made to bathe it or to take something from it. During this period therefore the child can be taught to develop powers of self-control and recognition of the rights of others which will undoubtedly serve for the basis for future training in both ethics and general education. At a later period (between two and six) the child's lack of control is shown in its inability to distinguish between ideas of contradictory character suggested by the same association or between the desirable and the fact. For this reason more than one author has expressed the opinion that all children are liars. They, however, ignore the fact that truth and falsehood are not instinctive but result from checks acquired by the accumulation of facts. Indeed, in many grown persons the power of distinguishing between wishes and facts is not very clearly developed. The general recognition of this mental state has led to the enunciation of the truth of the French epigram, that every truth is overshadowed by a sophism more like the truth than the truth itself, or, as it is more tersely put in the original, "*c'est vrai mais ce'est pas vraisemblable.*" At this period therefore a good training must result in the accumulation of facts which will instruct the child to distinguish between its own wishes and outside facts, as the earlier training of the first period taught it to distinguish between the different parts of its body and the outside world. In short, the training of this period must be based essentially on the principle that there is a secondary I, as well as a primary one constituting the basis of selfishness. The great aim of education at this time is the creation of checks on explosive propensities, whether of the higher nervous centers as shown in the explo-

sions of anger or the unconscious mendacity.

In this education the forebrain requires special attention, it is a checking apparatus against lower and more instinctive natural impulses. The higher its development the greater is the tendency to subordinate the particular to the general. Even in the lower animals a high state of social growth occurs as in the communities of bees and ants. The same is the case in the development of man in the infant; a being entirely wrapped in its instincts of self-preservation the "primary I" is predominant and the child is an egotistic parasite. As development goes on, this standpoint is passed, conscience assumes its priority, the forebrain acts as a check on the purely vegetative functions.

The development of the child after birth may be divided into the period of infancy from birth to two years, childhood from two to six years, boyhood and girlhood from six to twelve and puberty and adolescence from fourteen to twenty-five. Each of these periods is marked by certain phenomena of growth, more especially exhibiting themselves in changes in the osseous system, more particularly in the jaws and teeth. From twelve to twenty-five the reproductive system is one factor that has to be particularly reckoned with. Many of the phenomena charged to other causes are really due to the defects produced by failure under the struggle for existence between the organs at this period.

DISCUSSION ON DR. KIERNAN'S PAPER.

Dr. E. S. TALBOT—A number of points brought out by Dr. Kiernan in his paper were specially interesting to me as a dentist. The essayist, as an alienist and neurologist, is more competent to speak as to the effects of the periods of stress. As these periods of stress undoubtedly affect the nervous system first, they should be studied from that standpoint. A great mistake is made when these malformations and conditions are attributed solely to heredity. If the first period of stress mentioned which takes place at about four and a half months of foetal life studied, an arrest of development is noticed to a greater extent than at any other period in the life of the child either in utero or after birth. It behooves the general practitioner of medicine to see that the mother is well cared for as regards her diet, her general condition; that she

shall not worry; that she shall not be frightened, and that especially she shall have proper and plentiful food and drink. Those are the most important points to be considered. The arrest of development which takes place at this period evinces itself in the senile condition, which all have noticed in some cases.

In the next period (which has been referred to at length, between the period of birth and two years), the nervous system is in a very unstable condition. The tissues of the body are controlled in their development by the nervous system, and if the nervous system is not in a healthy condition the tissues will not develop normally. Practitioners of dentistry see a great many cases of arrest of development at this period. In such cases the child suffers to a great extent when teething. I am not prepared to say that the eruption of a single tooth would cause spasms or a disturbance of the alimentary canal, but practitioners of dentistry lose sight of the fact that at certain periods there is more than one tooth developing. There may be three or four, or five or six, that are trying to make their way out of the jaw at one particular time. Therefore, in some of these cases, since the teeth do not erupt regularly, and since there is an arrest of development, three or four teeth will try to come through at one time. In such cases it is necessary the child should have the greatest attention from the family physician. The greatest period of stress is at about the sixth year. It is at this period that arrest of development invariably takes place. The jaw becomes arrested in its development, and the permanent teeth have not room to make their appearance in the jaw. Hence, irregularities of the teeth and arrest of the face also takes place at this time. A peculiar lipomatosis is often seen. In every such case I have observed the nervous system is unstable, is not in a normal condition and very seldom becomes normal. These children are peevish and irritable. The parents cannot control them. The jaws are always small and teeth irregular. Many of them are mouth-breathers. These conditions in children are more noticeable at the sixth year than at any other.

Another period of stress upon which the essayist laid great stress was from the twelfth to the twentieth year. To the dentist this period is also important on account of the correction of irregularities of the teeth. The teeth should be cor-

rected early, because the alveolar process is undeveloped, the teeth move more easily and are all in the jaw, except the third molars which come later. As regards pain in its relation to the regulation of teeth, it is very important that the dentist should be medically educated. There are many instances where neurotic children have been totally prostrated on account of the nerve strain superinduced by the correction of these deformities. The family physician should attend especially the child's general health at this time.

Dr. JOHN C. COOK—I was interested in Dr. Kiernan's view of the early discipline of children, but have never thought of it in as clear a light as the doctor puts it, particularly the control of the temper. I was also interested in the periods into which he divided child-life, and pleased to hear his remarks about teething being a demonstration of the nervous system rather than a pathological condition, as it has heretofore generally been considered. Pediatricians and physicians generally for the past few years have concluded that teething is not a pathological condition; yet there will come along a number of phenomena, such as an attack of bronchitis with the eruption of a tooth, or a cough, or some other nervous disturbance that we are unable to account for.

Dr. GEORGE W. COOK—I would like to ask Dr. Kiernan what are the conditions of infection in these periods of stress?

Dr. KIERNAN (closing the discussion)—In answer to the question of Dr. Cook, I would simply point out one general pathologic law. Any contagious disease has in regard to any given condition three relationships. Its phenomena are modified by the organism in which it occurs, which includes the period of stress. It modifies disastrously, or exceptionally otherwise, the conditions which are present at that time. Furthermore, it often leaves behind it secondary results at these particular periods.

Contagious diseases very frequently burden the organism so that it is unable to pass through certain mental phenomena. With reference to the frequency of nervous phenomena and the arrest of the child to a certain extent at that period of development, this frequency is not only true of the nervous sys-

tem, but also true of the teeth and the jaws. To an appreciable extent there is arrest of that kind. On the mental state there is frequently an arrest of the development of the secondary ego—an element in the child that recognizes something outside of itself. Every now and again children are seen who previous to attacks of scarlet fever were perfectly moral and straight, but after that become so intensely selfish that they could not see the rights of others. Among the idiotic children of RandaIs' Island, New York City, a seemingly recurrent scarlet fever occurred. They would be apparently well, but suddenly there came on an eruption. That eruption, strange to say, could not be traced in a number of cases to streptococcic infection, but was related to the neurodermatoses, which might produce the original condition.

Typhoid fever occurring particularly at the periods of from twelve to twenty-five, is particularly apt to leave behind it a tendency to atheromatous degeneration of the arteries, causing a number of local and even cerebral conditions. It must be remembered that the term lipomatosis is used to designate rather a fatty than fleshy condition. Lipomatosis is an expression of imperfect metabolism—a condition of suboxidation similar to the gouty, lithemic and other so-called uric acid states. The child, on account of certain defects, is unable to burn up properly the fat furnished and consequently it accumulates. Those conditions have been observed at these periods by a large number of independent observers. Dr. Talbot among the dentists, Féré, the French alienist, and German pediatricists have observed independently these phenomena about these periods.

In speaking about the simplicity of the child's organism, I would only add one further illustration. Man has gone along in the senile period. The child is still free from the burden of the preservation of the race; he is still free from anything but the accumulation of healthy intellect and habits; in short, he is in a period which is essentially one of growth. This simplicity of growth element of the child in the youth has practically disappeared. He is then advancing to a number of complicating factors. The child, therefore, arrives to a certain degree in its structure at an ideal which the race does not fully reach because of the various periods of stress.

EDITORIAL COMMENTS.

The Contagiousness of
Pneumonia.

After prolonged discussion the contagiousness of pneumonia is now admitted by most authorities, according to M. A. Jussu (*Th. de Paris*, 1901). After a brief review of the histories of several epidemics and of the literature of the subject, he goes on to say that the pneumococcus is capable of causing pneumonia, whether its source be an abscess, an otitis or a pneumonia. Contagion is either direct or indirect. When direct, the vehicle is usually the expectoration, which contains active pneumococci as long as the disease lasts, and frequently for a considerable period thereafter. Other excretions may also contain the specific organism. Indirect contagion may occur through fomites or even a healthy individual. Direct contagion may show itself within a short time, or may be delayed many days or even months. M. Netter has concluded that only after an interval of two years can one be sure of being entirely free from danger.

The writer also calls attention to the possibility of the transmission of pneumonia from mother to fetus through the placenta, as well as that of transmission from mother to infant through the breast-milk. Although he considers that pneumonia is most surely contagious, he nevertheless admits that contagion is comparatively infrequent. This is due to two principal causes—either the virulence of the organism must be increased or the resistance of the patient lessened. The causes of variation in the virulence of the germ are many, and are but poorly understood. It would seem to vary in virulence in different months, even in different years. A fall in temperature, changes in atmospheric pressure and in hygrometric conditions have much influence. Diminution of resistance of

the patient may be either congenital or acquired. As an instance of the former is cited the peculiar susceptibility of the negro, as pointed out by M. Marchaux. However, diminution of resistance on the part of the patient is usually acquired. It may be due to some general condition, as syphilis, grip and the like; or to some local condition, as asthma irritation from the inhalation of metallic dust, and so on. From these considerations it follows that careful prophylaxis should be insisted upon. The sputum should be disinfected by heat or antiseptics. Walls should be whitewashed and woodwork washed with strong antiseptics. Bedclothes, hangings, rugs, etc., should be disinfected by steam under pressure. The mouth of the patient should be kept as clean as possible both during the attack and for some time afterwards. Those in attendance on the patient should be most careful to keep their mouths clean and should use large loose gowns on entering the sick chamber, as is done by careful attendants in cases of other infectious diseases.

T.

Mrs Eddy. and Health
Laws.

It may be of interest to quote the following portion of an interview between a representative of the *New York Herald* and Mrs. Eddy which appeared in the issue of that journal for May 1, 1901:

“Do you reject utterly the bacterial theory of the propagation of disease?”

“Oh,” with a prolonged inflection, “entirely. If I harbored that idea about a disease, I should think myself in danger of catching it. No such thing. I may say that I am very susceptible to an atmosphere of fear about me.”

“Then, as to the laws—the health laws of the States on the question of infectious and contagious diseases. How does Christian Science stand as to them?”

“I say render unto Caesar the things which are Caesar’s.

We cannot force perfection on the world. Were vaccination of any avail I should tremble for mankind, but knowing it is not and that the fear of catching smallpox is more dangerous than any material infection, I say where vaccination is compulsory let your children be vaccinated and see that your mind is in such a state that by your prayers it will do the children no harm.

"So long as Christian Scientists obey the laws I don't suppose their mental reservations will be thought to matter much. But every thought tells, and Christian Science will overthrow false knowledge in the end."

"What is your attitude to science in general? Do you oppose it?"

"Not," with a smile, "if it is really science."

"Well, electricity, engineering, the telephone, the steam engine—are these too material for Christian Science?"

"No, only false science—healing by drugs. I was a sickly child. I was dosed with drugs until they had no effect on me. The doctors said I would live if the drugs could be made to act on me. Then homoeopathy came like blessed relief to me, but I found that when I prescribed pellets without any medication they acted just the same and healed the sick. How could I believe in the science of drugs?"

"But surgery?"

"The work done by the surgeon is the last healing that will be vouchsafed to us, or rather attained by us, as we near a state of spiritual perfection. At present I am conservative about advice on surgical cases."

It is truly gratifying to know that the Minerva of "Scientists" believes in rendering unto Caesar the things which are Caesar's. But the question arises: How are these philosophers to know when to "render"? In other words, granting that they are law-abiding citizens, how are they going to recognize those "errors" which blind unbelievers call "infectious diseases"? In order, then, not to break Caesar's laws, it would

seem advisable for them to familiarize themselves with the several concepts that in the minds of unregenerate mortals suggest the idea "catching." That Mrs. Eddy is at present conservative about advice in surgical cases is also a hopeful sign however nebulous her other remarks on this subject may seem.

T.

WHILE WEEPING IS QUITE NATURAL ITMAY BE "CURED" IN
CHILDREN.

It comes natural to every woman to pity a child when it hurts itself. Be the misadventure big or little the mother immediately takes the little one in her arms, and in her most sympathetic, pitying tones, tries to solace it. And, of course, the child concludes something horrible has happened to it, and cries vigorously. A little baby, if pitied, can soon be brought to a weeping state when nothing whatever is the matter with it. Just call up your most tender, sympathetic tone; ask him that time-honored question, "Did they boos the baby?" (this has no reference to West Point) and the lips will begin to quiver, the mouth to droop, and soon a wail breaks forth that is meant to indicate that "they" did.

Of course children will cry sometimes. Crying is an institution that cannot be done away with. Crying, more or less, is expected with the advent of the little stranger, but the more or less depends largely on the parents. A child can be laughed into a good humor. Instead of pitying him at the numerous little hurts he gets, those that are really of no consequence, treat them as a good joke. Laugh at them and the baby will quickly laugh with you: It doesn't take long to chase the tears away. Besides doing away with a lot of unnecessary crying, it teaches him not to mind little hurts and develops a brave, manly little fellow. This does not apply to serious mishaps, but to those numerous little bumps which youngsters are continually getting, and which a little pity quickly magnifies into something of importance in childish eyes.

Never giving a child anything he cries for is another excellent way to nip in the bud the crying habit. If it is proper for him to have, promise it to him when he stops crying. Reward his good behaviour, not his bad. Of course, if bad habits in this direction are formed, it is hard to correct them. But such discipline observed from the beginning will make crying an infrequency in the home where the youthful monarch reigns.—*Philadelphia Telegraph*.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON
PEDIATRICS.*Stated Meeting, November 8, 1900.*

THOMAS S. SOUTHWORTH, M. D., Chairman.

Pyelonephritis in a Child; Nephrectomy and Recovery.—Dr. LOUIS FISCHER reported this case and presented the patient. When the child had been first brought to him in April of the present year she was 12½ years old. There was a history which had been taken by four other physicians for malaria and anemia. There was no history of syphilis or tuberculosis in the family. Examination had shown the presence of a large abdominal tumor over the right kidney, measuring three by four inches. The percussion note over it was dull. Examination through the rectum caused pain extending from the tumor to the ileo-cecal and umbilical region. Many urinary examinations had been made without finding any pus or blood in the urine. The temperature had ranged between 100° and 101° in the mouth, and there had been progressive emaciation. The case had been referred to Dr. Marx for laparotomy. The pelvis of the affected kidney was found to have been converted into a pus sack, and staining failed to reveal the presence of tubercle bacilli. Since the operation the child's weight had increased from 69 to 96 pounds. The child now passed at least two pints of urine in the twenty-four hours and was perfectly normal. It was rather remarkable that the stools had been uniformly flat since the operation.

Dr. S. MARX said that he had employed the anterior or transperitoneal method because of the size of the tumor, the impossibility of differentiating this tumor from some other intra-abdominal growth before operation, and because the tumor had been intimately adherent to the liver. He had first seen the child on July 16, and at that time she had been hectic and greatly emaciated. Examination had shown a tumor in the region of the right kidney of the size of a foetal

head at term. On the following morning a three-inch incision had been made through the right linea semilunaris. The upper pole of the tumor had been intimately associated with the inferior surface of the liver. About a teaspoonful of pus, along with some gritty material, had been removed from the pelvis of the affected kidney. So deep had been the wound that 18 feet of gauze had been used in the packing. There had been an exceptionally smooth convalescence. The absence of pus in the urine before the operation was probably explained by the plugging of the ureter, for within a few days after the operation a considerable quantity of pus had drained into the bladder. The result had been especially satisfactory, because statistics showed about 50 per cent. of mortality in adults operated upon in this way.

Dr. A. JACOBI said that he did not think pyelitis was so very uncommon in children. Some years ago Dr. Holt had contributed an interesting and valuable on this subject, and he believed, had directed the attention of the profession to the more frequent occurrence of this disorder than had been supposed. Nephritis is quite common in the newly-born and the very young. If a stone had been found having a nucleus of uric acid, he would say that this was a case of pyelo-nephritis, but the gritty material spoken of might have been the result, and not the cause, in this case. It was well known that uric acid infarctions are present and are voided in the urine of infants from the third to the twenty-second day of life. He had seen a few cases of pyelo-nephritis recover under a treatment consisting of proper regulation of the diet and the internal administration of gallic acid—a drug which is well borne by the young. It so happened that in these cases the calculus had been discharged.

Dr. FISCHER said that the majority of cases of pyelo-nephritis in children that he had seen had been associated with a vulvo-vaginitis. In this case he had taken particular pains to find out whether or not there had been any vulvo-vaginitis. When about four years old there had been some acute disease, apparently scarlet fever, and following this there had been for four years an intermittent fever. It was possible that this acute infectious disease was the cause of the

pyelo-nephritis and not valvo-vaginitis.'

Status Lymphaticus—Enlarged Thymus.—Dr. HENRY HEIMAN presented a boy of $3\frac{1}{2}$ months, born with the aid of instruments. The mother stated that since birth the child had had a peculiar whine, and that it readily became cyanosed, though recovering from this in about half a minute. Examination showed increased dulness over the area of the thymus, especially over the right lobe. This was probably a case recently of status lymphaticus. These children are liable to become suddenly cyanotic and die. An autopsy had been held recently on such a case dying in the Mount Sinai Hospital Dispensary.

Dr. A. JACOBI said that there was extensive dulness on both sides, indicating enlargement of the thymus. In percussing for an enlargement of the thymus, it was important to turn the child in the prone position, as this gave a much more distinct dulness than percussion with the child on the back. Auscultation showed in this child a systolic murmur at the second rib, but he was not prepared to express an opinion regarding the significance of this murmur. He hesitated, however, to attribute all of the symptoms to the enlargement of the thymus. In this case the symptoms are chiefly apparent when the child cries, and this in itself was a point in favor of congenital heart disease.

Dr. C. G. KERLEY said that he had seen two cases of sudden death in convulsions without any prior symptoms, and the autopsy had revealed the presence of a greatly enlarged thymus.

Dr. E. LIBMAN said that he had made autopsies on four cases in which there had been an enlarged thymus. One of these was the child dying suddenly at the Mount Sinai Dispensary. Another child had presented the symptoms of laryngismus. Two others had presented an edema of the thymus following extensive burns.

Report of a Case of Infantile Scurvy With Some Unusual Features.—Dr. FRANCIS J. MURRAY presented this re-

port. The subject of it was a child that had been breast-fed for three months and a half, and then had been given cow's milk and barley water, about equal parts. About the sixth month the food consisted of a teacupful of thick barley gruel added to one quart of good cow's milk. Shortly after recovering from an attack of pneumonia, it had been noticed that the child cried when touched. After these symptoms had lasted for about one month the case had come under Dr. Murray's observation. Examination showed nothing distinctive about the gums. The child screamed when touched, and gave no evidence of rickets. It was well nourished and had three teeth. The mother was directed to continue the usual diet, only adding freshly expressed beef-juice. The mother returned in one week, and then its condition was decidedly worse. The gums were of a dark purple, and there were several belbs upon them. The mother was then directed to add a liberal quantity of orange-juice to the beef-juice and milk food. In three days there was such a change for the better that the child already seemed to be almost well.

Dr. KERLEY said that he had had twenty-four cases of scurvy, and over half of them had developed on this diet, although these children had not been assimilating their food properly. This seemed to him the chief factor in the etiology of scurvy. Scurvy certainly develops in children fed on full milk and on various other diets.

Dr. WALTER LESTER CARR said that the report certainly did show the value of adding orange-juice without changing the rest of the diet.

Remarks on the Pathogenesis and Prophylaxis of Acute Rheumatic Fever in Children.—Dr. HENRY HEIMAN read this paper. He said that climate, meteorological changes, bacteria, physiological and pathological chemistry had all been supposed to hold the key to the solution of this important problem. Prout attributed the disease to an excess of lactic acid in the blood, but it would be interesting to know how he determined the quantity of acid, as there is no reliable test known for estimating the quantity of this acid in the blood. Haig ascribes the disease to an excessive formation of uric acid

in the blood; yet other investigators had not been able to demonstrate the existence of this excess of uric acid in the blood. As early as 1881 the theory had been presented that the disease is of miasmatic origin. A most plausible theory associated the origin of rheumatism with the introduction of certain germs into the system. This theory was founded on the following facts: (1) Pathological evidence based on autopsy findings; (2) examinations of the blood in acute stages, showing leucocytosis and diminution in the hemoglobin; (3) certain specific organisms had been found and isolated, and phenomena similar to those of rheumatism had been set up by inoculation experiments in the lower animals. The speaker expressed his belief that in rheumatism one had to deal with a special variety of bacteria with an attenuated virus, the clinical picture varying with the location of the lesion. The portals of infection were usually the tonsils, the digestive track or the respiratory tract. Through these avenues the toxins find their way into the serous cavities, and by predilection the joints. Here an inflammatory process was set up, though there was little tendency for the joint contents to become purulent. Later on the germs or their toxins might find their way into other tissues. There was reason to believe that the bacteria and their toxins may find a nidus primarily in parts other than the joints, and migrate no further. In children there was less liability to a joint involvement, and sometimes it might be altogether absent. In his experience the pleura was rarely involved in children under four years old. The most frequent complication was endocarditis. A frequent condition in acute rheumatic fever was a peptonuria, probably the result of an abundant destruction of the leucocytes with absorption of the resulting products.

Rheumatic fever is very rare in children under three years of age, although a few well authenticated cases had been reported in which the disease had occurred in children under one year of age. In this connection it should be remembered that joint involvement in such young infants was usually the result of scruvy. The salicylates had been regarded by most practitioners as specific. For the past year he had carried this salicylate treatment out in accordance with the theory governing the administration of quinine in malaria. In acute rheumatic fever, therefore, he administers the salicylates prophylactically.

After the acute local and constitutional symptoms had subsided and the child was, to all intents and purposes, cured, he continued the salicylates in doses of from three to five grains three times a day for one week in each month for about one year or longer. The principle involved was that the bacteria or their toxins might remain dormant in the economy for a long period, and it was probable that there was no antitoxin developed in the system to give immunity. By this prophylaxis he believed heart complications would often be prevented, but in many instances this could not be placed at rest as could be done with rheumatic joints.

Dr. A. JACOBI said that certainly the drift of modern opinion concerning the etiology of rheumatism was microbic. There was still much doubt as to whether there was a specific organism or whether several organisms were responsible. It was probable that staphylococci and streptococci are the causes of a great many diseases, among others, of rheumatism. The fact that throat diseases precede rheumatism had been known for years before the microbic theory of rheumatism had been propounded; yet there was a reason now for believing that the throat is the point of entrance of the germ of rheumatism. Why was it that the lower extremities were more affected by rheumatism in about 75 per cent. of the cases? Charcot, he believed, had first pointed out that trauma was a cause of acute rheumatism, and Verneuil found that rheumatism frequently developed after contusions and fractures. Cocci are frequently found floating in the blood, and as long as the circulation is sufficient they will be eliminated without doing harm. But when, in consequence of a trauma or of semi-pathological congestion, the circulation is impeded, these cocci will not be eliminated, but will be deposited. This explains the frequency with which the joints are affected in rheumatism. It was often not a joint, but the peri-articular tissue that was really affected. The same thing occurred in tuberculosis. Many traumatisms could not be avoided, but trauma in the throat, or rather pathological states of the throat, could be controlled. Large tonsils should be excised and adenoids should be cured. It was not always necessary to scrape them out, for numerous small adenoids would disappear if the nasal toilet were made with normal saline solution twice a day.

This irrigation should be done with a cup, not with a syringe. This removes the mucus and deprives the bacteria of a favorite nidus. If the circulation in the joints is kept active rheumatism is not likely to occur. Therefore, anaemia must be combated, and the cutaneous circulation kept active. Small children should be accustomed to a cold wash and a good rubbing down once a day. This was one of the best of cardiac stimulants.

Dr. JAMES J. WALSH said that Singer's work was now discredited in Vienna. Widal had reported that he had examined eighteen cases with all known media, and had been unable to obtain a single culture. He had also taken the joint fluids from this series of cases, and had found in every case that the principal cell content was a large polynuclear leucocyte—a sure sign of infection and body reaction. Most of the so-called rheumatic complications were now looked upon as probably secondary. This points to the necessity for greater care in cleansing not only the nasal passages but of the digestive tract. The salicylates were now looked upon in Europe as useful in treating the symptoms, but not the rheumatism itself. It was certainly not through their antiseptic effect that they gave so much relief, because other and better antiseptics were greatly inferior when given for rheumatism. It had not been found that the salicylates shorten the duration of the disease, though they reduce the pain and fever and make the patient more comfortable. Immobilization of the joint seemed to be injudicious because it retards the circulation and favors degenerative processes.

Dr. LIBMAN said that if a bacterium were found in the heart post-mortem, or in the blood during life, and it grew on the ordinary media, it could be safely stated that the case was not rheumatism. Recent efforts had been made in England to grow the organisms found on an acid medium. He was inclined to believe that there is a good deal in the lactic acid theory of rheumatism, and that the organism which is the cause of rheumatism will be found to be one which is capable of producing a great deal of acid. It was known that nearly all bacteria produce acid in the presence of sugar, and that in the human body there is always 1-10 per cent. of glu-

cose. It was a well known clinical fact that alkalies do more than any other remedies towards preventing the cardiac complications of acute articular rheumatism. He was inclined to think that recurrences of rheumatism are due to outbreaks in the body of the causative agents left in the body from the previous attack, and were not the result of new infections; hence, the prophylactic treatment advocated in this paper seemed to him reasonable.

Dr. A. JACOBI said that he always made use of the salicylates in the rheumatism of both adults and children. He directed that the salicylates be kept in the house, and whenever there was the slightest rheumatic pain that the person should be kept quiet and given this drug. He was confident that in this way he had prevented a number of attacks of rheumatism and complicating endocarditis. Unfortunately, the stomachs and kidneys of many people do not bear the salicylates well. The alkaline treatment was the treatment of fifty years ago, when he had begun the study of medicine. He had employed this treatment freely in the early years of his practice, and, while the lactic acid theory might be sound, this alkaline treatment certainly leads to many unsound hearts.

Dr. N. OPPENHEIM said that many so-called predispositions are probably nothing more than states in which the blood contains micro-organisms, so that a trauma or other exciting cause enables these organisms to find a lodgment and give rise to a lesion. This was in line with what Dr. Jacobi had said about trauma determining the location of a rheumatic lesion.

Dr. KERLEY thought the salicylates were too dangerous to justify us in recommending their extensive use after rheumatism, but it was proper in cases that had already developed an endocarditis. He was now treating such a child with strychnine and iron one week and the salicylates the next week. He had also found the cool spinal douche useful.

Dr. HEIMAN, in closing the discussion, said that the mode of action of the salicylates was but little understood; yet Prudden had shown that they have a distinct poisonous action

on the protoplasm of cells and prevent the migration of the white cells. It was well known that cases of nephritis never stand the salicylates well, probably because when the renal function is impaired a considerable quantity of the salicylates is retained in the system and splits up into carbolic acid. The relapses of typhoid fever were accounted for on the theory that the antitoxin is developed late in the disease.

PRECOCIOUS MENSTRUATION.

Henry A. Strecker writes as follows to the *Philadelphia Medical Journal* (Oct., 1900): The case that I desire to report will, I think, be accepted as a true case of "precocious menstruation." The patient is L. M., aged $3\frac{3}{4}$ years. Birth was normal. Shortly after birth a bloody discharge escaped from the vagina. This continued for a few days and gradually disappeared. The condition excited no special comment, as I had seen it in several other cases. Eighteen months later the bleeding returned. The onset was accompanied and preceded by severe abdominal pains. The discharge lasted for two days. Two months later it again returned, ushered in by the same symptoms of pain. The following month the same condition prevailed, and also two months later. For the next five months nothing of the kind occurred, but then it made its appearance and has done so regularly every 28 days. The onset is always preceded by pain for 24 to 36 hours.

An interesting feature of the case is that the menses in the child appear on the same day as that of the mother. The face and development of the child are those of precocity. Her two brothers, both of whom are older, are what would be termed delicate children. She is stronger and larger than either and weighs more than the eldest brother, who is five years her senior. Her bones are large and her muscles are well developed. Her mammary glands are large and stand out well from the chest. At the menstrual period she complains of pains shooting through them. Hair is beginning to make its appearance on the pubes.

A BED-BRACE FOR INVALID CHILDREN.

Who has not witnessed in any hospital ward or sick-room the often painful efforts made by little sufferers, sick or weak in convalescence to sit up in bed. The nurse is not always at hand and before she can attempt to assist the patient, even if competent to do so the child may anticipate what is needed by trying to rise itself. The following appliance, which can be made in almost any home in a few moments, may be the means of averting much suffering or even danger, as in typhoid fever. A piece of broomstick, a yard long, to which is attached strips of broad roller bandage, can be tied to the iron bedstead or fastened by a few tacks underneath the footboard of a wooden bedstead. When it is desirable for the child to sit up, or even for an adult patient, the nurse hands the stick to the patient, and by pulling with both hands a sitting posture is easily and painlessly assumed. The pillows can then be adjusted to sustain the patient in position.—D. W. Parker, Westboro, Mass.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, December, 1900. (*Continued from May 1st issue*).

Acid Intoxication in the Gastro-Enteritis of Nurslings.

Alkalinity of the blood is still more markedly lowered. The lowering in alkalinity fluctuates with the diarrhea, appearing when this symptom appears and disappearing when it disappears. Irrigations of the stomach cause a rise in the alkalinity, but the mechanism of this influence is as yet obscure. Athrepsia or cachexia alone is not sufficient in order to produce acid intoxication when the diarrhea has disappeared. A watery diet lasting from twenty-four to forty-eight hours does not affect the alkalinity of the blood, but it is probable that if continued for a longer period it will cause acid intoxication.

2, The Gait of Children with Hip Disease Studied with the aid of the Cinematograph.—By Dr. ROMMINCIANO and Dr. A. BOLINTINEANO, of Bucarest.—The authors made an elaborate series of investigations concerning the features of the gait of children with hip disease and illustrate the points brought out in this study by a number of cinematographic pictures. Their conclusions as regards the gait of these children are as follows: (1) This study has placed in evidence the features already known clinically concerning the tendency to bear the weight of the body on the sound limb. (2) It has shown that there are modifications in the action of the sound limb in walking. (3) The steps are shortened, especially in the advanced stages of the disease. (4) The body is held either bent forward or backwards instead of perfectly erect. (5) In some cases the children walk on the tips of the great toes.

3. Foreign Body in the Air Passages; an Ear of Corn that had Penetrated into the Bronchus and Caused the Development of a Pulmonary Gangrene Followed by a Fatal Hemoptysis—Autopsy. By Dr. R. SAINT PHILIPPE and Mlle NOURRIT.—The child was 4 years of age and accidentally swallowed a blade of false oats (*hyordeum murinum*). He was seized with violent cough but this subsided and no attention was given to the matter until four days later, when he began to cough violently and to spit a quantity of blood. At the hospital he developed a gangrene of the right lung and died of fatal hemoptysis. The gangrenous cavity was situated at the base of the right lung and was of the size of a small orange. The ear of corn was found in the mass of gangrenous tissue, where it had remained ten days.

4.—Asphyxia as a Result of Macroglossia in a Newly-born Infant. By Dr. LOUIS GUINON.—The child was brought to the hospital in a state of asphyxia. Its tongue was enormous, but no other cause was found for the suffocation. Intubation was impossible on account of the size of the tongue and of the rigidity of the larynx. Tracheotomy was therefore performed and the infant began to breathe freely but died in three days of a bronchopneumonia. The autopsy showed that the larynx was intact.

ANNALES DE MEDECINE ET CHIRURGIE INFANTILES,
December 1900.

1.—Suboccipital Rheumatic Arthritis (Chronic from the First)—Permanent Torticollis. By Dr. PAUL COUDRAY.—Ordinary rheumatic torticollis is transient but in certain cases, particularly when an arthritis is present, it may become chronic. If the initial symptoms of the arthritis have been acute, it is not difficult to distinguish the cause of the torticollis, but if the arthritis has been chronic from the first, the diagnosis is not so easily made and the trouble may be mistaken for suboccipital Pott's disease. The author reports a case of this kind. The patient was a boy aged 13 years, who began to show symptoms of fatigue of the head without fever or pain and two weeks later developed torticollis. There was a family history of rheumatism. The rotation of the head was very marked, the chin almost touching the sternum. On the left side the suboccipital region was the seat of a marked swelling underneath which one could feel the contracted muscles, especially the splenius, and the transverse processes of the upper three vertebræ. Therefore there was some osseous displacement. The bony and articular structures were slightly sensitive to the touch. The movements of the neck were very limited, but not abolished.

At first owing to the chronic course of the affection and owing to the position of the swelling on the side of the neck opposite to the contracted muscles it was thought that the torticollis was the result of a cervical Pott's disease. The author found, however, that the torticollis had come after exposure to cold. The onset was rather sudden but without fever. This mode of onset spoke against Pott's disease. The child was suspended in Schmidt's apparatus for auto-suspension and after fifteen minutes the contracture was visibly lessened and the swelling in large part removed. This showed that the swelling was due to the abnormal position of the parts as well as to a contraction of the muscles but not to an osteoarthritis of Pott's type. The possibility of Pott's disease being thus removed, it remained to decide whether there was a torticollis pure and simple or one produced by arthritis of the suboccipital joints due to rheumatism. Ordinary torticollis, as has been stated above, is transient, while that which is due to an arthritis is chronic. The rheumatic history of the parents, the excessive rotation of the head, the slight displacement of the occipital vertebræ, and the participation of the posterior neck mus-

cles in the contraction instead of the sternocleidomastoid, pointed to the presence of an arthritis. The treatment in such cases may be summed up by the words extension and massage. Schmidt's apparatus, which is a modification of Sayre's, was used by the author. In addition massage and general treatment of the rheumatic condition are essential.

2.—**Sphygmography in Children.** By Dr. I. V. TROITZKY.—The author studied the pulse of infants and children by means of sphygmographic tracings. (To be continued).

PEDIATRIA, December, 1900.

1.—**A Case of Nevus Occupying a Region of Skin Corresponding to the Area of Innervation of Certain Nerves (Nevo Radiocolare).** By Dr. PIRRO BOLOGNINI.—The patient presented a nevus on the right upper extremity. The reddened area was separated from the normal skin by a line which arose at the root of the neck on the right side continued horizontally for about 1 cm. around the neck and descended to the right sternoclavicular articulation; then continuing downward it joined the left middle sternal line at the level of the third interspace, thence extended to the ensiform cartilage and ascended to the right $\frac{1}{2}$ cm. above the mammary line, returning to the axillary line 3 cm. above the axilla. Thence the outline proceeded upward and backward across the middle of the scapula at the level of the second dorsal vertebra, then forward and upward to the place at the root of the neck where we began. The rest of the skin of the upper extremity was also discolored and appeared of a mottled bluish-red color. The skin of the arm was darker than that of the chest, the region of the elbow was slightly lighter, and the skin of the forearm was darker again. The posterior aspect of the upper limb, however, showed a strip of normally colored skin which was about two finger-breadths in width extending up to the axilla and down to the middle of the forearm. A small, clear space was also noted over the styloid process of the ulna. The skin of the hand was divided into two regions by the discoloration, The portion which embraced the three inner fingers and the adjacent region of the hand was of a dark red color, while the rest of the hand was covered with normally colored skin. The author concludes as follows from a study of this case: The flat vascular nevus with which he had to deal in this case was beyond doubt a radicular nevus, i.e., one caused by an anomaly of development which occurred in the territory of skin innervated by the prolongations of the posterior roots of the fourth, fifth, sixth, seventh, and a portion of the eighth cervical nerves, leaving free the area supplied by the lower anterior and posterior branches of the eighth cervical, as well as by the branches of the first and second dorsal. This anomaly is of fetal or embryonal origin, and probably is due to an infection which traveled through the maternal blood and affected a small part of the ectoderm of the embryo or of the nervous system of the fetus.

2.—**Painful Spasmodic Dysuria of Children.** By Dr. DURANDO DURANTE.—The attention which has been paid to the urinary apparatus in childhood within recent years shows that affections of this system are by no means as rare in early age as was formerly supposed. In childhood it is particularly the nervous disorders of the bladder that demand attention for even from the first day the newly-born infant may be subject to spasmodic dysuria. Other neuroses of the bladder which may be observed in childhood are pollakiuria, nocturnal incontinence and diabetes insipidus. In addition there may disturbances of urination as the result of the presence of calculi, and in intestinal diseases of children there may also be disorders of the urinary function. In addition to these cases there are instances of dysuria and vesical tenesmus which do not depend on any of the causes above enumerated and constitute the only symptom manifested by the child. The patient begins to cry, grows very restless, pulls up his legs on the abdomen and after a few minutes urination takes place. The jet of urine is normal, not interrupted, and the quantity of urine emitted is large. The act of urination is immediately followed by a cessation of the pain and the child becomes perfectly quiet. This order of events may be observed at intervals, especially in younger children. The trouble lasts a few days perhaps a week and then disappears, with or without the intervention of medical treatment. The author reports a case of this kind.

There can be no doubt that there is a neurosis of the bladder in children which does not depend upon any anatomical lesion but is due to a disorder of the nerves which supply the vesical apparatus. It is characterized by a difficulty in the emission of urine, by a spasm of the sphincter of the bladder and by pain, which permits the designation painful spasmodic dysuria.

In order to understand the pathogenesis of this condition it will be necessary, first, that we examine the condition under which the act of normal micturition takes place. The urine flows gradually into the bladder. As long as its quantity is small the elasticity of the sphincter is sufficient to keep it within the bladder, but as the urine accumulates the walls become distended, sense of fullness is experienced and a sensory impulse is conveyed to the sphincter center which reflexly relaxes the muscle over which it presides. If the bladder is filled while the child sleeps, there is a struggle for supremacy between the sphincter, which bars the exit from the bladder and the muscles of the bladder-wall which become distended and reflexly contract, seeking to expel the contents. If the sphincter gives way the urine escapes. In children in whom the intelligence as yet plays no role in the act, the process of micturition takes place exactly as described above for the sleeping person. Adults, by the exercise of the will, can contract the sphincter more strongly and thus balance the accumulating tension. If the nerves that supply the sphincter in childhood be disordered there may be a disturbance of the equilibrium between the sphincter and the detrusor muscles and the sphincter contracts more strongly than usual, with the result of producing a spasmodic condition, such as described above. The bladder fills up in the meanwhile and the sense of fullness gives place to pain. Finally the detrusor muscle over-

comes the resistance of the sphincter and the urine escapes. A tendency to nervous derangements is often sufficient to determine a disorder of the sphincter such as has been described. The treatment is exclusively medical and consists of regulation of the diet in order to avoid reflex irritation from the intestines, tepid baths, hot poultices to the hypogastrium and the administration of sedatives and alkalies. The general condition should also be attended to, particularly the tendency to nervousness and and rickets.

KINDERARZT, January, 1901.

1. **Sana in Infant Feeding.** Dr. L. FUERST.—“Sana” is an artificial butter prepared according to the method devised by Liebreich and Michaelis. The advantage of this preparation is said to be its freedom from tubercle bacilli which are found in butter and in the various margarine preparations. The author has used sana as a substitute for butter as well as for cod liver oil without the “slightest harm” in children. Koeppen, Friedmann and Rabinovitch have objected to the use of sana as a substitute for cod liver oil, and have questioned the wholesomeness of this preparation as an article of diet. The author states that he used sana for months in both healthy and sick children, and has not observed any tuberculous infection, but saw a marked improvement in the general condition of the children. Friedman investigated the frequency of tuberculous infection of the tonsils in children, and concluded that it is possible that the tonsils may be infected through the food in some cases. The present author cannot understand how these investigations can be quoted as antagonistic to the use of sana in children. Sana is a preparation that does not contain milk and cannot be held responsible for the cases of tonsillar infection which are the results of milk foods, such as butter, etc.

Rabinovitch found tubercle bacilli in two samples of sana. As there is no milk in this preparation, the source of the bacilli may be attributed to two things—either the presence of tuberculous glands in the fat which is used in the manufacture of sana, or the presence of other impurities. It is practically impossible to comply with the demands of Rabinovitch—that the fat used should come from cows that had passed the tuberculin test—for the fat comes from all sort of places, and, besides, it is heated for half an hour to 87° C. The only way in which tubercle bacilli can get into sana is by accident, and, as these germs are so widespread the same thing is possible with any article of diet. Since the appearance of Rabinovitch's article, the manufacture of sana is carried on with still greater precautions, the operatives are examined as to their health, etc., and no tubercle bacilli have been found in any of the numerous tests that have been instituted by various experts.

2. **Concerning Convulsive Sneezing in Whooping Cough.** By Dr. VON BOLTENSTERN.—Filatow, Roger and Henoch observed this form of pertussis and give accounts of cases in their treatises, Szego recently gave an account of a similar case in the *Archiv fuer Kinderheilkunde*, 1900, Vol. xxix., 3-4. The author saw a number of cases of pertussis in

the epidemic of 1900 in Bremen, in which there were convulsive attacks of sneezing taking the place of the cough. Before the sneezing set in the child was seized with restlessness and anxiety and sought to get hold of some support. He held the head bowed to the chest and the lips pressed together, as though struggling to overcome the attack of the cough. Then came in some cases an attack of sneezing of a violent type, eight or twelve times in succession, occasionally interrupted by a few ordinary inspirations. The face and neck became red, the lips blue and the attack ended, as a rule, with copious discharge of a thick mucus from the nose. At the outset of the disease there was also vomiting after the attacks. The attacks could be prevented by the introduction of the finger into the pharynx, thus causing a desire to vomit: There was never any vomiting, however, after this reflex irritation, but simply a discharge of mucus from the mouth. If the attack was allowed to continue, the child would appear quite exhausted after the paroxysm had passed. Pertussin seemed efficient in all these cases.

3. **Some Remarks Concerning Laryngismus Stridulus.** By Dr. FISCHBEIN.—The author states that he cured fourteen cases of this trouble by withdrawing the milk from the infant's diet. He found that such infants could be fed with farinaceous foods to greater advantage.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, January, 1901.

1. **Hepatic Abscess in Children as a Result of Contusions.** By Dr. C. ODDO.—The author sums up his investigations on the subject of traumatic abscess of the liver in children as follows: While in general abscess of the liver is rare in children, traumatic abscess of the liver is relatively more frequent in children than in adults. This relative frequency probably depends upon the greater frequency of traumatism in the young. Sometimes the symptoms appear immediately after the traumatism; at other times there is a latent period during which there are no symptoms. In most cases the traumatism affects the hepatic region directly and the abscess is then direct or primary. Rarely another region of the abdomen is injured, and the abscess is then secondary or indirect. The symptoms of traumatic abscess of the liver are: Local pain, the presence of a swelling, fluctuation, etc., a remittent or continuous febrile movement and rapidly progressive cachexia. The abscesses tend to burst externally or into the respiratory passage. In the latter case the abscess may burst directly into the bronchus, or it may cause a purulent pleurisy or a sub-diaphragmatic pyopneumothorax. Evacuation is followed, as a rule, by improvement, which takes place very rapidly, but appropriate surgical interference is required to secure permanent cure.

2. **Researches Concerning the Changes in the Bones in Rachitis.** By Dr. LOUIS SPILLMAN.—The author examined the bones of 44 children, whose

ages varied from a few weeks to two or three years, and who had died of various diseases. In thirty cases histologic examinations were made, including especially the epiphyses and the diaphyses of various bones, the costochondral junctions, the bones of the cranium and the bone-marrow. The clinical course of rickets is divided by the author into three stages: (1) Period of onset or latent stage, (2) period characterized by slight swellings and deformities, and (3) period of recovery, consolidation or cachexia. The writer considers rachitis as an osteitis of the regions about the epiphyses and under the periosteum.

3. Note on the Glycolytic Power of the Tissues of Nurselings in Health and in Gastroenteritis. By Dr. EUGENE TERRIEN.—The author injected sterilized solutions of sugar containing a known quantity of carbohydrates into the circulation of a number of nurslings, and increased the dose until glucose appeared in the urine. In this way he was able to determine the power of the tissues to store up glycogen in healthy babies as well as in those affected with gastroenteritis. He found that the glycolytic power of the tissues is relatively high in nurslings, and that this power is not affected by the presence of gastroenteritis. Hence, in investigating alimentary glycosuria in infants, the presence or absence of gastroenteritis may be disregarded.

4. Mortality of Children Under One Year in Norway. By Dr. AXEL JOHANNESSEN.—The mortality of children under one year in Norway during the years 1876 to 1897 was 9.76 per cent. This figure is lower than those reported by any other country of Europe. The author attributes this low mortality to the proportion of children that are nursed by the mothers until the time of weaning comes, and also to the great care given to babies in Norway. The average mortality for the country districts is 8.5 per cent., and that for the cities is 13.08 per cent.

VOMITING OF PERTUSSIS.

R Menthol.....gr. i
 Sacchari.....gr. xii

M. Ft. chartulæ No. vi. Give one powder every two hours.—
 BAGINSKY.—*Jour. A.M.A.*

PEDIATRICS

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NO 11.

ORIGINAL ARTICLES

THE IMPORTANCE OF THE EARLY RECOGNITION OF EAR TROUBLE IN CHILDREN.

By MACLEOD YEARSLEY, F.R.C.S.,
Surgeon to the Royal Ear Hospital, etc.

THE discovery of adenoids by Meyer, of Copenhagen, in 1868 gave a certain impetus to the better recognition of the importance of the study of otology, especially in children, as a part of the curriculum of the medical student, and since that time the efficiency of the general practitioner in both diagnosis and treatment has slowly but surely improved.

In a large majority of cases partial or total loss of hearing in a child is not noticed by a doctor on first seeing the patient, and, save in a few intelligent instances, is not accepted or believed by the parents. This is less often the case in total deafness, but in instances of partial damage only the condition is often unnoted or neglected until the child is more advanced in years and is at least over the age of four. The consequence is that much very valuable time is lost and treatment has little or no effect.

Let us take an instance—a child is the subject of adenoids and gets attacks of deafness with every cold, from which it recovers with diminishing frequency, until it is in a condition

of permanent deafness of sufficient severity to seriously handicap it in its future struggle for existence. This condition is directly due to the adenoids, and if recognized earlier and properly treated, would have resulted in perfect recovery. Having progressed to the stage just described, however, the prognosis as to the treatment is far less hopeful. One sees, unfortunately, cases of this class with a too great frequency, and the appearance of the membrana tympani is sufficiently significant to one who has the opportunity of frequently observing such cases. Whenever I find the drum exhibiting a loss of transparency and a dullness which is best likened to ground glass, I always find without exception that that case has gone too far to obtain much benefit from treatment as regards recovery or improvement, and one can only safely promise that the removal of the adenoids will improve general health and act probably as a stay to further progress of the deafness.

Even in these days of improved medical education and perfected methods of diagnosis there are still practitioners who have sufficient temerity to assure parents that their children will "outgrow" deafness or discharge from the ears. The latter is, of course, a constant menace to life, but it is almost equally criminal to neglect the former since the sense of hearing is to some extent as necessary to the taking of one's place in the community as that of sight.

It follows therefore that if a child is deficient in hearing, the sooner that fact is ascertained beyond a doubt the better. Steps can then be taken to ascertain the cause, amount and probable curability of the trouble and, if incurable, to at once place the patient in the best position for acquiring education in other ways than through the ears.

It is not always easy to determine satisfactorily the presence or absence of deafness in a young child, simple as it may seem to those who are unaccustomed to dealing daily with deafness.

A child may be slow in learning to talk but this is by no means always an indication of defective hearing. Certain mental defects, too, may simulate deafness and must be excluded. Should a child, otherwise normal, pass its first two years of life without acquiring one or two simple words, especially the "dada" and "mamma" with which all babies

quickly learn to greet their parents, it is most probable the subject of defective hearing. The general practitioner who is in the habit of seeing the child will probably have his attention frequently aroused at an earlier period, and should this be the case, he should at once take measures to ascertain the accuracy of his suspicions. In any case of doubt I think it is best to examine the child under chloroform rather than risk possible future deafness.

Much has been written on the dangers of discharge from the ear in children, and even now there are individuals who allow such cases to pass from bad to worse without making any real effort to save them. The significance of earache in children is of equal importance and receives almost equal neglect. So many men seem to lose sight of the fact that the ear may be the *fons et origo mali* in many a puzzling febrile attack.

Pain in the ear may be described roughly as of two kinds—inflammatory and non-inflammatory. It is the former that is most common in children, indeed, the non-inflammatory form is, in my experience, rare, and those who assert that the majority of cases of earache in children are “neuralgic” in character fall into grave error. Small babies cannot make known the seat of their pain and can only draw attention to it by screaming lustily, a means at which they are singularly proficient. When a child is in pain it requires careful observation to ascertain the spot at which that pain arises. The raising of its hand to the ear, or the refusal to lie upon that organ, or the tenderness of the ear to touch in washing, etc., may afford an indication, but much future trouble and chagrin would often be saved if the ears were examined in every case of febrile attacks apparent pain, or even fretfulness. Pain in the ear varies much in intensity, and while in one case a child may be thrown into paroxysms of screaming and possibly almost into convulsions, in another there may be only a condition of fretfulness and whimpering.

A “cold in the head” in a baby nearly always affects the lymphoid tissue in the vault of the naso-pharynx. This fact affords an easy explanation of the frequency of inflammations of the middle ear in early life. The usual results of such inflammations and their simulation of meningitis, when they have not given rise to that complication, is sufficiently well

known to all practitioners and there is no necessity for me to dwell upon it. The apparent attack of acute meningitis, pneumonia, typhoid fever or other serious disease which can be cleared up by a timely incision in the drum membrane, bulging from retained inflammatory products, must be familiar to every physician who has much to do with children.

The importance to the general practitioner of the early recognition of ear-pain in children cannot therefore be overestimated; he is the first to see the case and by excluding the ear he will greatly simplify this method of diagnosis, while if he at once localizes the seat of the pain in that organ he will have the satisfaction of saving the patient much possible future suffering, himself much annoyance, and he may—possibly—earn the gratitude of the parents.

The simulation of or connection with other regional diseases was strikingly shown by Hartmann in 1899.* He called attention in an article entitled "On the Intestinal Disturbances Produced by Otitis Media of Infants" to the fact that loss of weight and elevation of temperature should always demand an examination of the ears, when it would often be found that the tympanic cavity contained pus, and relief would follow its evacuation. That author regards intestinal disturbance in infants suffering from otitis media as the result of the reabsorption of the toxic poisons from the exudate in the tympanic cavity, rather than that the ear trouble resulted from the infection entering the Eustachian tube during the act of vomiting.

It is astonishing how some men neglect their opportunities; one would think that in cases where the cause of a condition could not be ascertained with ease the practitioner would not rest until every organ had been investigated for a possible explanation, for his own reputation's sake if for no other reason. Yet, while engaged on this very article, I saw a case of a child of twelve, the subject of deafness due to adenoids and tonsils and in whom the tonsils nearly met across the fauces and were frequently the seat of acute inflammations, whose parents had been told by three general practitioners, practising in two of England's largest towns, that nothing need be done as she would "grow out of it."

* *Archives of Otolaryngology*, vol. xxviii, Nos. 2 and 3, 1899.

A CASE OF SPINA BIFIDA.*

By AP. MORGAN VANCE, M.D.,
Louisville, Ky.

THIS little girl, aged 4 years, was brought to me recently, the mother seeking advice in regard to a congenital condition which is evidently a spina bifida, there being a tumor about the size of a large walnut between the last dorsal and the first lumbar vertebræ, or it may be between the eleventh and twelfth dorsal. The meningocele is small and surrounded by a thin, fleshy pad.

You will notice that, because of the partial lack of one of these vertebræ, there being more loss upon the right than the left side, the child has a lordosis and a lateral deviation. There are no other peculiarities; she is a magnificent specimen and is in perfect health except for the meningocele.

DISCUSSION.

Dr. T. L. BUTLER.—I believe that this is a very favorable case for operative intervention. The opening in the spine seems to be small; the child is well nourished and seems to be perfectly healthy in every other way. I advise cutting down upon the tumor and ligating the sac; certainly that seems to be the proper operation; this tumor will certainly rupture in time, the wound become infected and cause the death of the child; there is no question about this. You can see how very thin the skin now is covering it. I think the child stands a good chance of ultimate recovery by the operation suggested; of course, owing to the defect about the spine, she will never be able to walk as well as a child without this defect.

Dr. H. H. GRANT.—I think this is an especially favorable case for operation for three reasons: (1) the tumor is small; (2) the covering we could obtain from the operation would be satisfactory as far as the muscles and skin are concerned

* Abstracted from the proceedings of the Louisville Surgical Society.

and possibly the periosteum; (3) the chief danger in an operation of this kind is infection; this opening is small and perhaps the sac can be dissected free from the surrounding tissues; I think rather than ligate I should suture it. I have in one instance had a fortunate result in ligating and have had a satisfactory result in suturing.

Dr. T. S. BULLOCK.—This is a case in which an operation is strongly indicated and I endorse what Drs. Grant and Butler have said. I would certainly advise that the child be operated upon and would be much disappointed if a good result were not obtained.

Dr. LOUIS FRANK.—I rise only to agree in what the gentlemen have said. There are other reasons, however, which make this a favorable case—the age of the patient; it is not a large opening; and the location of the tumor itself is also in favor of obtaining a perfect cure. This child presents none other of the characteristics which we usually find accompanying such a condition—cleft palate, clubfoot, etc.,

I reported a case of spina bifida to this society recently, and in looking up the statistics was surprised at the number of recoveries which have taken place in operations which were performed early, operations, for instance, in the early weeks and months of life. These cases usually prove fatal. In this case the covering of the tumor is very thin, being only the meninges, and, I dare say, the sac is even much smaller than it at present appears. The appearance of the sac and the size are often misleading.

FOR DIARRHEA IN CHILDREN.

Recommended by Hirsh.

R

Argenti nitratis.....gr.i

Sacchari albi 3 ij

Aquae destillatae f. 3 ij

Fiat mistura.

Sig. Take a teaspoonful every two hours. For newly weaned infants.

THE THERAPEUTIC VALUE OF THERMOL.

By EDWIN ROSENTHAL, M.D.,

Ex-Chairman of the Section of Diseases of Children, American Medical Association; Pediatricist to the Franklin Free Dispensary, etc., of Philadelphia.

DURING the past summer, which was noted for being an extraordinarily warm one, I had occasion to study the effects of thermol in various diseases of infancy and young children that are so common in the closely populated section of Philadelphia. In my service at the Franklin Free Dispensary, the daily number of new cases varying from ten to forty, I had abundant opportunities—with the aid of good assistants and a good nurse—to closely note the temperature records. I was enabled not only to see the cases at the beginning and during the course of the disease, but even after the results were noted, making the histories complete.

Much stress was placed upon the one symptom "fever" by the class of patients visiting this dispensary. The majority of them were Russian Jews. The use of water in any shape, and especially in the form of baths or even as a wash, was looked upon as a necessary evil and very many cases indeed were met with that were already injured by the constant presence of fever. In such instances any kind of medicine would be cheerfully given. But a bath or the application of a pack would simply loose you the patient. The Russian looks upon "fever" as a disease. Its cause is never questioned; its presence is what requires treatment. It made little difference to the care-taker if the patient had typhoid or pneumonia. Fever was what the child suffered from, and medicine for its fever was what they wanted.

I mention these points so that some understanding can be reached and the reason understood why the use of this remedy was persisted in, where perhaps the indication for a pack or bath would seem the correct one.

Thermol (which may not be known so widely from its chemical history, in fact, the knowledge of its chemical com-

bination ($C_{14}H_{15}NO_3$) will not assist very materially in its application to the disease) is best given in powder or pill form because it is a crystalline body not soluble in water. It is, however, capable of being mixed with other substances in liquid form and held in suspension with powdered acacia and sugar as for an emulsion, the vehicle being cinnamon water. If a powder was wanted the most common combination was:—

	gram.
℞ Thermol	0.50
Calomel	0.05
Sugar.....	5.00

mix and divide into fifteen powders and sign—one every one-half, one, two or three hours.

In this combination for all infants suffering from a disease in which there was an elevation of temperature and in which a purgative was indicated a treatment was begun.

From experience I believe in the method of small doses frequently repeated, and hence a child of six months would receive as a beginning dose 0.03 gram of thermol, this repeated every fifteen minutes or one-half hour, or as often as the necessities of the case required. When improvement manifested itself the intervals were lengthened. A very good point was also gained by the frequent administration, and that was the use of water.

If, as in a case of gastric or intestinal disturbance, an astringent was indicated, Dover's powder and bismuth subnitrate, with or without sugar, would be added in the following proportions:—

	gram.
℞ Thermol.....	0.50
Dover's powder	0.15
Bismuth subnitrate.....	4.00
Sugar.....	q. s.

Mix and divide into fifteen powders and sign—one after evacuation or every two hours.

Where the fever was high and its effect was feared upon the nervous system, that is, convulsion, after such remedies as a cleansing bath, we gave the thermol in combination with the bromides, thus:—

	gram.
R Thermol.....	1.00
Sodium bromide.....	1.50
Potassium bromide.....	1.50
Powdered acacia and sugar.....	10.00
Cinnamon water.....q.s. ad c.c.	100.00

Mix and sign—a teaspoonful every one, two or three hours.

As a simple remedy in "feverish" conditions of infancy or young childhood small doses of thermol frequently repeated were found to be the best; and after the temperature was reduced the intervals of administration were lengthened.

As to our method of giving the drug the following explains: 0.01 gram of the drug was given every fifteen or thirty minutes, as the height of the fever or the severity of the case might direct and until the fever began to decline, when the intervals were lengthened to two or three hours and so continued until a complete recovery.

The greatest number of children that visit a dispensary in summer suffer from some gastric or intestinal trouble or from "teething." In the teething cases the fever record was of a peculiar type—never constant—at times as high as 105° or 106°, while in an hour or two 102° would be recorded. With a fever as high as 106° there is the greatest danger from convulsions. Twitching was so frequently noted that we always gave the bromide mixture. Another prominent symptom that comes with teething is the "cough." Sometimes this may be slight, but oftentimes neglect brings it to such a state that death results.

In cases of intermittent fever thermol was given with benefit during the fever. A large dose, repeated quickly, would reduce the temperature rapidly. This fact in typhoid fever would raise doubts, and hemorrhage was twice looked for, as it was thought the fall of temperature was due to this.

Knowing now how thermol acts such fear need not be held, as in no instance did we meet with any untoward symptoms.

Of the five cases of typhoid brought in three responded to Vidal's test.

In whooping cough thermol was very efficient—0.06 grams to a child of a year was given every two or three hours. If

the attacks were frequent, (twenty or more a day) the bromide mixture was used.

During my term of service we treated—

130	cases	of	fever	due	to	heat
5	"	"	typhoid	fever.		
15	"	"	whooping	cough.		
63	"	"	intestinal	diseases.		
59	"	"	teething.			

Our experience gives us this belief: Quinine for malaria, mercury for syphilis, the various antitoxins for their antagonist are the true specifics as at present known, but if it is known that a fever long continued causes death the removal of this symptom is essentially specific and therefore in the category of these remedies thermol should be placed. In thermol we have a perfectly safe and certain antipyretic of known value and in its action it is not only antipyretic but also hypnotic and analgesic.

TUBERCULOSIS: ITS CLINICAL HISTORY.

GEORGE DOCK, *Physician and Surgeon*, September, 1900, writes as follows: Early symptoms of tuberculosis that should always be remembered but need not be further described here are weakness, frequent pulse and other disturbances frequently classed as vasomotor, such as tendency on the part of the pulse to run up under examination and an increased tendency to sweating. Fever with or without chills belongs usually to the plainly evident stages of the disease, but is sometimes noticed very early. It seems to me that the propensity to look on the early chills and fever of tuberculosis as malarial is fortunately less common than it used to be. Up to four or five years ago about half the tuberculous patients applying at my clinic had as a sole diagnosis that of malaria, whereas now I hardly ever hear the word in this connection. Pleurisy as an early complication of tuberculosis and pleurisy as a tuberculous disease, or as one leading to tuberculosis, are fairly well known. I find it a source of satisfaction to inoculate a rabbit or guinea pig with the centrifugated sediment of every pleural effusion. Even if this is done, every patient who has pleurisy with effusion should be carefully watched for at least six months, or, if possible, for two or three years.

A CASE OF INTUSSUSCEPTION.

By S. KUNZ, M.D.,

Chicago.

THE case of intussusception, to which I call your attention, occurred in the little patient whom you see before you a year and a half ago, when she was not quite five years of age. Her past history is negative. The trouble began as an acute affection on Sunday, June the 11th, 1899, at 5 o'clock in the morning, when the child cried with pain in the abdomen; this pain soon ceased and was followed by a movement of the bowels. The character of the movement, however, was unobserved. The pains continued at varying intervals, gradually becoming more severe. At 7 o'clock the parents administered two ounces of castor oil, but it was only retained about an hour. She refused nourishment, and the small quantities of water of which she partook were also rejected by the stomach. The paroxysmal pain and vomiting continued throughout the entire day. At 4 o'clock in the afternoon I was called to see the child, when the following facts were noted: She was in bed, looked somewhat pale, and stated that she felt well; her tongue was moist, and slightly coated; her pulse was 96, full and strong; the temperature 99° per rectum. The abdomen was soft, there was no distention, and her limbs were fully extended; abdominal palpation failed to reveal any tender or painful areas, nor could any mass be discovered. While I was talking to the parents the patient cried with pain, referring it to the hypogastric region; it passed away in 20 or 25 seconds, and she informed me that she felt better again. Before I left the child had an evacuation of the bowels, containing some fecal matter, small quantity of mucus, and two specks of blood not larger than an ordinary pin-head. Two ounces of castor oil was ordered, and the stomach rested absolutely and positively. The parents were instructed to carefully watch the evacuations for blood, and if any appeared to notify me at once. At 8 o'clock in the evening the father came to my office and informed that the child had made several ineffectual attempts to move the bowels, and with the last attempt some three or four ounces of blood passed. The diagnosis of intussusception was made.

The danger of delay was explained and, in order to save time, an immediate consultation advised, without my seeing the patient a second time, at 8.30. At the time of my second visit the characteristic sausage-shaped tumor of intussusception was found in the transverse colon externally. The operation was performed at the home of the parents at 12.30 Sunday night; the peritoneal cavity was opened to the left of the median line at a point corresponding to the center of the mass. The transverse colon with its contained intussusception was withdrawn until the neck of the intussusception was reached, which proved to be in the ileum; the adhesions being very frail, moderate traction succeeded in disinvaginating the lower six inches of the ileum, the cecum and its attached appendix, and the greater portion of the ascending colon. At the neck of the intussusception the bowel looked darkened, but the application of a few hot sponges soon reestablished the circulation to such an extent that no anxiety was felt as to its subsequent viability. The appendix was removed and the wound closed, each layer being sutured separately.

The first three days no untoward symptoms were manifest; the bowels moved spontaneously on the third day, the movement being well formed and natural in appearance; on the fourth day the temperature which had previously been 100° or below per rectum, gradually rose to 102° , the patient complaining of pain at the site of operation. The wound was dressed and found in a normal condition, no redness nor puffiness; the silkworm gut stitches were removed and each was perfectly dry. At 3 o'clock in the morning of the fifth day I was called to see the child, when she had a temperature of $105\frac{1}{2}^{\circ}$ per rectum; was very restless, and complained of pain at the lower angle of the incision. I was at loss to account for the high temperature; the bowels had moved on the third day, also on the fourth; the abdomen was not distended, and there was no vomiting; but fearing an abscess from some of the catgut ligatures or adhesions, I decided to open the lower angle of the incision, which was done, but nothing pathologic was found. I proceeded upward until the entire wound had been opened down to the peritoneum; the continuous catgut ligature, which had been used to unite the peritoneum, was found entirely free and dry, it was removed, and then the lower angle of the peritoneum was opened; there was no peri-

tonitis nor adhesions. The peritoneum was closed, but the patient did so poorly under the anaesthetic that the remaining structures were simply drawn together by means of adhesive plaster.

The interesting features of the case are:

1. The early diagnosis.
2. The non-administration of opiates before a positive diagnosis was established.
3. The early operation, four hours after the diagnosis was positively established.
4. The high temperature without apparent cause.
5. The secondary laparotomy.
6. The extent of bowel involved.
7. The union obtained without sutures.

Dr. A. J. OCHSNER.—The first case of Doctor Kunz brings out important points regarding intussusception. The history, close observation of the progress of the case, etc., made it possible to make a diagnosis of intussusception at a time when the pathologic conditions were slight, so that the prognosis was naturally good. Intussusception is a very harmless condition, provided we approach it surgically at an early stage. This case illustrates very clearly some of the points that were brought out in a discussion last week on ileus. Had this patient been treated for two or three days by means of opiates or cathartics, recovery would not have taken place. Cases of intussusception that are promptly treated by surgical measures practically all recover.

The patients who are operated upon late practically all die, so that this is a very valuable case to bear in mind from the fact that it was treated correctly from the beginning. The presence of obstruction with pain does not always suggest a mechanical condition, but simply obstruction, and the physician who is called and treats the pain with opiates, or the obstruction with cathartics, will spoil the case. Neither of these things should be given. The diagnosis should be made and the case treated in the manner in which Doctor Kunz treated this case.

Dr. M. L. HARRIS.—I want to criticize one or two points in connection with this case, although the patient recovered. The diagnosis was correctly made to the extent of establishing the condition of probable intussusception. The cardinal rule was violated of opening the abdomen in the left side. If we

do not know where to enter the abdomen, we should enter it by a median incision. Knowing the enormous proportion of ileo-cecal intussusceptions in children, it would have suggested the probability of finding the trouble in this region. I have seen the abdomen opened on the right side where the seat of obstruction was not properly located; then making an opening on the left side and, being unable to reach the seat of the obstruction, the surgeon made an incision in the median line, making three incisions through the abdominal wall.

Dr. ALEXANDER HUGH FERGUSON.—The case of intussusception presented is very interesting and the result very good. We know that the mortality in children is very high. Taking that point into consideration, we should strive to overcome the obstruction by other means, as by rectal injections, by inflating the lower bowel with air or gas. I remember operating on an infant six weeks old some six hours after the first symptoms of intestinal obstruction began. The bowel appeared almost normal. The operation was easy and simple, but the child died.

I operated on another infant about two and a half years old, the obstruction being of five days' standing, and that child died.

In the next two cases of intussusception I had in children, I used injections and both of them recovered. When a physician is called to a case of suspected intussusception, I think other means than surgical should be tried, as, for instance, abdominal taxis, introduced by Jonathan Hutchinson a number of years ago. I think this method of treating intussusception has a place in the early stages. Then, too, we can use hot baths, injections, invert the patient; even give an emetic if the stomach is full, so as to reverse the peristaltic action.

I have not removed the vermiform appendix when operating for intussusception. The removal of the appendix adds a little more to the gravity of the case, therefore I have refrained from doing any surgery that was not absolutely essential.

Dr. KUNZ, in the closing discussion, said: In regard to the suggestion of Doctor Harris, of opening the abdomen in the median line, I do not think it makes much difference whether we divide the rectus muscle or not. I believe it is good policy in abdominal surgery to make our incision where we can feel the mass. While it is true that intussusception usually begins in the region of the ileo-cecal valve, we know that the

intestines in children will admit of considerable motion. Coils of intestine can be withdrawn from the cavity to almost any extent, and probably this is one of the reasons why children have intussusception.

Referring to the remarks of Doctor Ferguson, concerning the use of enemata, I would have tried them in this case were it not for the fact that in three other cases of intussusception which I saw in the practice of other physicians they were used without avail. All three were operated upon and died, the bowel being gangrenous. I believe that if cases of intussusception could be operated upon early, the percentage of recoveries would be far greater than if they were treated first with inflations or with enemata. While it is justifiable to inflate the bowel or to use enemata for the purpose of relieving the obstruction, there is one objection to it, namely, the danger of rupture of the bowel. If that does not occur, we have the second danger of temporary relief which is brought about by over distention that paralyzes the bowel, and even if part of the obstruction is reduced, the intussusception itself may not be relieved.

THE TREATMENT OF TRACHOMA BY EXPRESSION, WITH SPECIAL
REFERENCE TO THE RECURRENCE OF THE DISEASE.

In the light of his later experience, the writer would summarize his conclusions as to the value of the method of treatment of trachoma by expression as follows:

1. Of all the mechanical methods that have been devised for the treatment of trachoma, it may be said that expression in suitable cases is the most efficient remedy yet discovered, effecting, in a large percentage, a more or less complete cure with better preservation of the conjunctiva than any of the other methods hitherto described.

2. It must, however, in every instance, be carefully followed up by local treatment until all tendency to relapse has disappeared.

3. The success of the method depends upon the conscientious removal, so far as possible, of all the trachomatous bodies without injury to the conjunctiva.

4. In any event, so far as the writer's experience goes, more or less frequent relapses will occur.—Thomas R. Pooley, *N. Y. Med. Jour.*, Dec. 15, 1900.

SCARLET FEVER: DIPHTHERIA.

By J. MORRISON RAY, M.D.,
Louisville, Ky.

I RECENTLY saw two cases of considerable interest. The histories are as follows: Two gentlemen married sisters and lived next door to each other. There was a case of scarlet fever in the family of one, which ran a typical course, with considerable throat complications, typical scarlatinal eruption, etc. The child eventually recovered.

The brother-in-law next door had a child taken sick a few days later with a very sore throat, but without any eruption. It went along for several days, when one morning very early I was called to see the case in consultation to stop a profuse nosebleed. When I reached the house the child's nose had been plugged and the hemorrhage stopped, so that I thought it wise to let well enough alone and did not disturb the nasal plugs. The child was young and difficult to examine, and I could see nothing in the throat. The typical scarlatinal eruption was not present. The next day the patient passed into collapse and died.

The day before I was called to see this case, that is, three days before death took place, the mother was taken sick with sore throat and very high fever. I was asked to see her the day after the child died, and in examining the throat I found hanging down out of the naso-pharynx a large mass of diphtheritic membrane. Questioning the family and attendants I learned the child that died had spit up quite a quantity of membrane. The mother evidently had been sick for four or five days before I made the examination. She had slight glandular involvement of the neck, but there was no evidence of systemic infection beyond a weak heart.

The question I desire particularly to hear discussed is, this being a case of diphtheria which had existed for five or six days, whether, the heart being in bad condition, it would have been wise to use antitoxin. I have been a firm believer in

* Abstracted from proceedings of the Louisville Medico-Chirurgical Society.

antitoxin especially in children where it can be used sufficiently early; but in this case the disease having existed for five or six days, the heart being weak and irritable, I advised against the use of antitoxin.

The membrane was beginning to separate when first discovered, all the deposit being in the naso-pharynx.

It would seem as if the child that died had a mixed infection, scarlet fever and diphtheria.

DISCUSSION.

Dr. S. G. DABNEY.—I believe I would have used antitoxin in this case. I see no reason to suppose that antitoxin has an injurious influence upon the heart. We certainly frequently use it in children *in extremis* and they recover. It has been used in a vast number of persons in health for prophylaxis without any bad effect.

The argument might be made that the conditions are different using it in health and under the circumstances described by Doctor Ray; I do not believe, however, that antitoxin would have added anything to the gravity of the case. It is probable that the patient will recover without it, but in every case if I was sure of my diagnosis of diphtheria I would use antitoxin.

Dr. WM. CHEATHAM.—I would have used antitoxin in this case, with strychnine for its effect upon the heart. We know that one attack of diphtheria does not prevent another immediate invasion, and antitoxin in this case might have prevented further trouble.

Dr. WM. BAILEY.—I simply want to ask one question, and that is in reference to the supposed mixed infection in the case of the child that died. The only reason I can see for presuming that there was a mixed infection was the fact that there was a case of scarlet fever next door. So far as the case is concerned as reported by Doctor Ray, there is no proof that there was any scarlatinal infection in the child that died or in its mother. Diphtheria is quite sufficient to account for everything observed. The close relationship of scarlet fever and diphtheria, and the relationship of the two families would not be sufficient to warrant a presumption of scarlet fever without the eruption or without some other manifestation of the disease. Scarletina without eruption is very rare, as rare as the eruption

of measles without the catarrh, unless it is one of those cases in which toxemia and death comes before the time of eruption. Scarletina is one of those diseases that is very likely to show an eruption if the patient lives a sufficient length of time. These two patients lived long enough to have the eruption, because we get it on the second day. As no eruption came I would be inclined to attribute the manifestation to diphtheria alone.

As to the use of antitoxin: I do not believe that it has any marked depressing effect upon the heart, and it may relieve the heart that is depressed under the toxin of diphtheria by combatting that toxin. I would rather give it than not if the heart was depressed, at the same time I would support the heart by the administration of strychnine as indicated by Doctor Cheatham.

Dr. J. M. RAY.—In the case that died I understand diphtheria was not suspected and there were all the evidences of scarlet fever, barring the eruption; further, owing to the age of the child an examination of the throat could not well be made.

I saw the mother on the fifth day of her illness, that is five days after she had commenced to have fever, and examination of the throat showed membrane loosening in the naso-pharynx. Her heart was in such condition that I was afraid the shock of the injection of antitoxin would be too great. She received a number of hypodermic injections of strychnine, and was given whiskey in milk. The membrane in the throat had about disappeared, but the condition of the heart remained the same. I do not believe antitoxin has any direct influence upon the heart, but under the circumstances I was afraid to give it.

INFLUENZA IN CHILDREN.

R Sodium benzoate.

Salol.

Acetanilid āāgr, iss.

Caffeine g. $\frac{1}{4}$

S.—One such powder every three hours to a child of six years.—Sheffield, *Med. Rec.*

A CASE OF INFANTILE SCURVY WITH RECOVERY.

By T. A. ABT, M.D.,

Chicago,

Professor of Diseases of Children, Northwestern University Woman's Medical School; Assistant Clinical Professor Diseases of Children, Rush Medical College; Attending Physician Michael Reese and Cook County Hospitals, etc.

L EON S., aged 13 months, was admitted to the children's ward of the Michael Reese Hospital, November 9, 1900. The mother offers the following history: The child appeared to be well when born. He was one of twins; the other child died of gastro-intestinal complaint when 8 months old. The mother nursed the surviving child for the first three months of its life after which it was fed on artificial food. At least a dozen varieties of proprietary foods were tried. Finally condensed milk seemed to agree and under its use the child took on flesh. Consequently this food was continued until the baby was nearly ten months old. At about this time the child fell ill with a gastro-intestinal disorder, which was characterized by the occurrence of frequent, small and bloody stools. The mother says that at times the child had as many as thirty in one day.

For the past two months the child has been gradually growing worse. It vomits very frequently, stools are soft, contain mucus and very often blood. It perspires frequently about the head and extremities and is very restless at night. The skin is dry and the epiphyses at wrists and ankles are enlarged. The gums are soft, spongy, bluish in color, and bleed when rubbed or touched. During the course of the disease there has been little or no fever. The child has been extremely fretful; it cries as if in pain if the extremities are moved; if the napkin is changed or the position of the child changed in bed.

The family history presents nothing of interest.

Examination.—The child is greatly emaciated, the subcutaneous fat has nearly disappeared, the weight is 11 pounds and 7 ounces; the temperature is scarcely elevated, the pulse varies

from 136 to 140; the respirations are accelerated; diarrhea, with bloody stools and extreme restlessness persist. The anterior fontanelle is widely open; the eyes are negative; the

Fig. 1 Appearance on entering hospital, note swelling above left malleolus



tongue is coated; the gums are swollen, spongy and bluish in color. The junction of the bony with the cartilaginous portion of the ribs shows the presence of a prominent rosary. The

lungs and the heart present nothing abnormal. On the abdomen minute petechiæ occur. The abdomen is relaxed and the outlines of the abdominal viscera are marked. The liver is palpable, the spleen is not enlarged.

Extremities.—The epiphyses of the long bones are enlarged. The left leg presents at the inner malleolus a mass which is tense, painful and the size of a walnut (see accompanying photograph).

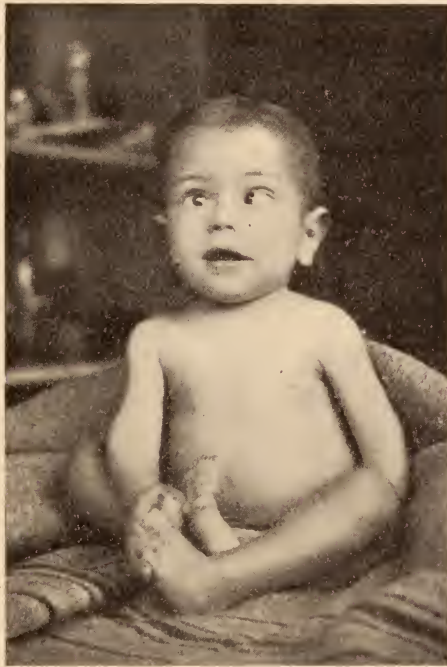


Fig. 2. Appearance on the day of discharge from hospital.

Blood Examination.—The blood count shows that there are 3,281,000 red blood corpuscles; 16,250 leucocytes; 45 per cent., and few poikilocytes.

Management of the Case.—The child was placed on an anti-scorbutic diet by supplying fresh cow's milk, beef juice and orange juice. Colonic flushings containing tannic acid as

well as 10-grain doses of bismuth given internally were employed to control the gastro-intestinal derangement.

On the fourth day after admission a wet-nurse was obtained; at first the breasts were pumped and later the child took the milk direct from the breast, notwithstanding that it had numerous teeth. The child very soon showed the effect of the treatment. In two weeks it had gained nearly a pound in weight, the hemorrhage swelling over the left malleolus had disappeared. The child had become less restless and entirely recovered from its bowel-complaint. The diet was later on increased, the child being allowed potatoes, bread and butter, cereals and scraped beef, all of which it took eagerly in addition to the mother's milk. The little patient was weaned from the wet-nurse at the end of seven weeks and very shortly thereafter was discharged from the hospital weighing 15 pounds.

The strabismus which is present appeared during the time that the child was in the hospital. The ophthalmologist, Dr. Pinckard, assured me that this should be regarded as a mere coincidence and did not depend upon the scurvy. To-day, the sixth of February, the child weighs 22 pounds; has an excellent appetite and appears to have entirely recovered.

AN OINTMENT FOR SCABIES IN CHILDREN.

Perrin (*Bulletin général de thérapeutique; Progrès médical*, Nov. 3d gives the following formula:

℞	Camphorated oil of chamomile	100	parts
	Ointment of liquid storax	20	"
	Balsam of Peru	5	"

To be rubbed on in the evening; on the next morning cleanse skin with soap and warm water and sprinkle it with starch, or, if the skin is inflamed, dress it with oxide-of-zinc ointment. The treatment should be continued for eight or ten days.—*N. Y. Med. Journal*.

EDITORIAL COMMENTS.

Acute Aural Inflammations in Scarlatina,
Measles and Diphtheria

An article on this subject,
by Dr. Arthur B. Duel,
of New York, appears in

the March number of the *Medical Review of Reviews*. The paper is based on an experience of 6,000 cases observed in the municipal hospitals of this city. Dr. Duel's conclusions are of much interest, and by reason of the perennial importance of these three diseases, we think that a brief notice of the article will be acceptable to most readers of PEDIATRICS.

"In a general way about one in five cases of scarlet fever; one in ten of diphtheria, and one in twenty of measles will be likely to develop an acute otitis media." Scarlatinal otitis is apt to come on rather late in the disease (2d or 3d week) and to be destructive and severe, often involving the mastoid cells. Should it occur after the eruptive fever has declined, a second sharp rise in temperature may be the first indication of its appearance. All symptoms may occasionally be absent till otorrhea appears.—Otitis in diphtheria is apt to be less grave than in scarlatina, more grave than in measles. In case of coincident infections the middle ear will likely suffer, as might be expected, with increased severity; here a double otitis is frequent, and involvement of the mastoid very common. In the latter case fever, tenderness over the mastoid antrum and (in children under five) a post-auricular swelling may be expected. In cases over ten years of age Dr. Duel believes this post-auricular swelling is invariably absent in acute cases, but that in all cases we may notice a "sagging or swelling of the upper posterior part of the auditory canal-wall close to the membrana tympani,"—this part being nearest to the mastoid antrum.

As to treatment, the writer emphasizes (in all but the

mildest cases) early incision under antiseptic precautions, sterilization of the meatus externus (with warm bichloride solution, 1:1000) generally preventing a catarrhal from becoming a purulent inflammation. Where the medical attendant can see the case frequently, the best drainage can be secured with a wick of sterile gauze frequently changed.—Should this be impracticable, irrigation with weak bichloride (1:5000) should be made often enough to keep the meatus free from pus. In mastoid involvement he thinks early removal of all the mastoid cells the best treatment in any case, and that if streptococci be present, delay in operation should for no reason whatever be admitted.

An eminently proper and wise prophylactic measure is urged—namely, that all children with these diseases should have their ears daily inspected with the speculum;—where this is impossible, the meatus externus should be washed daily with weak bichloride, in order to avoid infection in those cases where rupture of the membrane is the first sign of trouble.

B.

Sarcoma in Undescended
Testicle.

The following case reported recently by Dr. James Pedersen of New York (*Post-graduate*, August, 1900) seems of such unusual interest and instructiveness as to merit description at some length. Dr. Pedersen's account is in substance as follows:

“R. M.; aged 27; single. When he was thirteen years old his left testicle was driven through the inguinal canal to the internal abdominal ring, if not entirely into the abdomen, by a severe blow from a flying base-ball. The only immediate effect was local pain on exertion. Apparently neither this nor the failure of the testicle to descend again into the scrotum received any attention. He did not even report the matter to his parents. Gradually a tumor formed in the left inguinal region

and with its growth the local pain on exertion increased. Then frequency of micturition developed. He allowed the condition to take its course throughout the intervening fourteen years until last January, when the pain on exertion had become so great that he could scarcely stand up.

"The patient's general condition was now very poor; his anemia and his emaciation, combined with his dwarfish stature, presented a sorry spectacle. Local examination showed an apparently normal right testicle; the left half of the scrotum empty; the corresponding inguinal canal occluded; no evidence of hernia. Occupying the left inguinal region was a prominent, rounded tumor, which sloped away toward the median line, but which filled the hypogastrium and encroached upon the right inguinal region. The tumor could be felt per rectum on reaching high up. The diagnosis was sarcoma. Operation was advised and accepted.

"After the patient had had a preliminary week of rest in bed, and liberal diet and stimulation, the tumor was removed February 3d through the ordinary median incision. The omentum was found adherent over a considerable area of the upper surface of the growth, numerous adhesions bound it to the surrounding structures, and it was tightly wedged in the pelvis between the bladder and the rectum, to both of which it was adherent.

"When the tumor had been shelled out of the pelvis the pedicle was found springing from the region of the left internal abdominal ring and a secondary growth was discovered, which, from about the middle of the primary, extended upward behind the peritoneum to, if not involving, the left kidney. The patient's condition making expedition necessary, the pedicle had to be ligated *en masse*, and the retroperitoneal growth, at its junction with the primary, was ligated in two portions and cut." Owing to complications, a second operation was done shortly after.

The patient was allowed to sit up three weeks after the

first operation. The sutured portions of both wounds healed by primary union. Both sinuses were closed by the end of the seventh week. On microscopic examination the tumor was reported to be a large, round-celled sarcoma devoid of any remnant of testicle tissue.

The writer quotes from Pike (*Lancet*, II, 1897) an analogous case. The patient was abnormally developed in many regards, and the scrotum contained no testicle on either side. The right (undescended) testicle was the seat of a sarcoma weighing three pounds.

B.

"The Insect Fauna of
Human Excrement."

An exhaustive monograph on this subject was read before the Washington Academy of Sciences last December by Dr. L. O. Howard, Entomologist of the Department of Agriculture. While undertaken "with especial reference to the spread of typhoid fever by flies," the work was much more comprehensive than this, the object of the writer being to determine precisely what species of flying insects feed or oviposit upon exposed human feces, and how many of these are also attracted to human habitations.—The work was one of vast scope, and observers in many different states assisted at it. We can give here only slight mention to certain special features of the work.—During 1899 and 1900 23,087 flies were caught in and around human dwellings, examined and classified. Of these 98.8 per cent. were *musca domestica*; others of importance were the stable-fly (*muscina stabulans*), the "little house-fly" (*Homalomyia canicularis*) and the fruit-fly (*Drosophila ampelophila*).—All of these were also found breeding in or attracted to human feces.

After referring to the large literature of flies as frequent conveyers of typhoid, Asiatic cholera, and other intestinal diseases, the writer earnestly emphasizes the circumstances under which flies become peculiarly dangerous. While the house-fly

prefers horse-manure as a breeding place, yet in army camps, low alleys in cities, and country places where the box-privy nuisance is still tolerated, flies will breed in human excrement in vast quantities and may be attracted to it without oviposition. The writer suggests the following prophylactic measures,—to every one of which any enlightened physician ought readily to subscribe:—Box-privies should be abolished in every community. The voiding of excrement in the open within town or city limits should be made a misdemeanor; and the failure to report such an offence to the proper health authorities by the first person finding it, should be also a misdemeanor. That the number of flies may be reduced, boards of health should look more carefully into the proper treatment or disposal of horse-manure, and all regulations regarding garbage disposal should be more stringently enforced. B.

THE MEDICAL AND SURGICAL TREATMENT OF ACUTE AND CHRONIC
LYMPH NODES OF THE CERVICAL REGION.

The writer concludes as follows:

1. The cause of tuberculous adenitis of the cervical region

is almost always local and takes place through the buccal cavity.

2. The glandular manifestation, when it progresses, and especially when it is followed by suppuration, indicates a damaged and usually useless, often dangerous, gland.

3. The removal of such a gland *in toto* and promptly is neither difficult nor dangerous, and is the treatment indicated.

4. Nature will probably provide a new and equally perfect protection in the stead of the one that is lost.

5. Multiple enlarged glands indicate a constitutional tendency which will not be benefited by removal, except when local discomforts and dangers indicate it.

6. Small groups or single slowly-growing glands are subject to the same indication.—H. Horace Grant, *Louisville Mo. Journal of Med. and Surgery*.

SOCIETY REPORTS

STATED MEETING PHILADELPHIA PEDIATRIC SOCIETY,

Tuesday, November 13th, 1900,

THE PRESIDENT, DR. ALFRED STENGEL, IN THE CHAIR.

Dr. DAVID RIESMAN showed a little girl of eleven with complete loss of speech. Her parents were healthy, but the mother had sustained a severe fright while pregnant with her. Her fifteen-year-old brother was at present under treatment for a second attack of chorea, and one other child had died of convulsions.

The child was born after prolonged, non-instrumental labor, was very pale at birth, and was unable to take the breast until two months old. At the age of nine months she had a severe attack of whooping-cough, and when two years old, a spasm ascribed to teething. She did not begin to walk until five years old, and was unable to use her hands until seven. She had only recently begun to chew her food properly.

Convulsions set in at nine years, and had been frequently repeated since. On one occasion she had ten in one day. The attacks partook of the character of both petit-mal and grand-mal. There was some sort of aura, indicated by anxiety just before the onset, and an inclination to run to her mother.

Before the attacks came on, the thumbs, particularly the left, were turned in towards the palms; the attacks, however, began on the right side, but soon became general. Although large and well developed for her age, with a good sized, fairly well-shaped head, she had never spoken an intelligent word, uttering only incoherent sounds, which her mother had learned to interpret quite well. She was useful and obedient, and, in her mother's opinion, as intelligent as other children of her age. Her tastes were decidedly boyish. There was a left-sided hemiplegia, but the leg had recovered to a considerable extent. Athetoid movements were present in the left hand. There was a tendency to adduction of the left thumb, giving the hand a decided simian aspect. The adduction of the thumb was particularly marked when the palm was stroked, and appeared then to be of the nature of a reflex. The knee-jerk on the left side was somewhat exaggerated. There was a constant drooling of saliva, which had excoriated the chin. There was no evidence of syphilis.

The term aphasia was considered a questionable one, as in the opinion of certain authors, particularly Sachs, the word could not be employed in the case of an individual who had never spoken. Mutism might be a better term, but the word was ordinarily employed to indicate a functional condition. The absence of speech in the patient was remarkable, first, because of the evidence of a marked general intelligence, and second, because of the slight motor paralysis. The history, however, showed that the child had not used either arm for six years after birth, and had not walked until five years old. These facts, together with the complete absence of speech (aphasia), made it seem probable that there was in reality a diplegia; and the speaker expressed the opinion that there had been a bilateral lesion, more extensive on the right side, leaving a left-sided hemiplegia, and limiting itself on the left side principally to the speech area. As to the nature of the lesion it was believed to be meningeal hemorrhage. The cause was in doubt. It might have been the severe labor, the whooping-cough, or the convulsion when two years old; as regards the last the child had not seemed worse after it. It was not likely that the lesion was acquired in utero, else the child would scarcely have developed physically to the extent to which it had.

Dr. HAND.—I agree with Dr. Riesman as to the probable cause of the condition. I saw a case several years ago which I thought, from the title of Dr. Riesman's paper, might have resembled this very closely. There were, however, distinct differences. The case I speak of was that of a boy of 7 who exhibited good general intelligence, who had no evidence of any paralysis of his limbs, but who was completely aphasic. The only history that in any way seemed related to the condition was one of a severe burn of the scalp over the right parietal region by boiling water, the child presenting a scar in this region as the result of the injury. It could not be determined that this had any real causative relation to his aphasia.

Dr. Riesman's case resembles the syndrome called Little's disease, and if it be considered a case of Little's disease it points toward a cerebral condition as the origin of that symptom complex.

Dr. PEARCE.—This child presented by Dr. Riesman certainly appears intelligent. Some studies which I have made of imbecile children have, however, convinced me that they often exhibit the appearance of intelligence of a much greater degree than they really possess. From a hasty examination of this child, however, I think that there is no doubt that Dr. Riesman is quite right in saying that the child is fairly intelligent.

If this is the case I think it indicates a post-natal origin of the condition, and I believe that Dr. Riesman is probably right as to the cause.

Dr. TELLER.—Seven or eight weeks ago I saw a child which had convulsions, with marked fever, the attack having come on suddenly. After recovery from the acute symptoms there was paralysis of the arm and leg on one side, and of the facial nerve on the other, together with entire aphasia. The paralysis of the face and limbs has now disappeared, but the child is still wholly unable to talk. The underlying condition was, I believe, congenital syphilis.

There was a distinct history of syphilis in the father, and the use of potassium iodide in increasing doses in this child caused such rapid improvement that it seems hard to believe that the primary condition was anything but syphilis. The immediate cause of the attack was, I believe, hemorrhage.

Dr. ALFRED STENGEL exhibited a case of meningitis, a case of osteoarthritis with skiagraphs, and a case of esophageal stricture with skiagraphs.

The case of meningitis was that of a six-year-old girl whose history was good except for an early attack of measles. On September 22d the child while at table put her hand to her head, vomited, became stuporous, and went into convulsions, the movements being chiefly right-sided. The temperature rose by night to 102.5° . She was admitted to the Children's Hospital the next day in stupor or coma, it was difficult to say absolutely which. She showed a marked tache cerebrale, and there were frequent convulsive movements on the right side. (Slight movements of the left side were observed three times). The convulsions began in the face or upper extremity and extended from there. The temperature ran from 102° to 104° for several days, but rapidly subsided to about 100° , after this declining only very gradually. On the second day after admission lumbar puncture was carried out, and about an ounce of a clear watery fluid was removed. The improvement after this procedure was immediate and very striking. The child fell asleep very soon after, she used her right side quite freely, when previously it had scarcely been purposely used at all, she spoke after a day or two while she had been entirely silent previously, and she had no more convulsions. Since this time the recovery has been continuous and almost complete, though gradual. The only signs which she exhibits at present being a slight deafness (this was probably complete at first), some anemia, and some disturbance of vision. In the early part of her attack the child was unquestionably quite blind. At present she seems to have some perception of large objects; when

walking about the floor she avoids persons but is likely to stumble into chairs, etc. She also has some drooping of the eyelids. A curious mental feature in the case is that the child refuses to take anything but milk, and insists that she will not eat until she goes to her home, even spitting out bits of bread that are placed in her milk. The case was shown as an example of the improvement that often follows the use of lumbar puncture; though not necessarily due to the puncture.

The case of osteoarthritis was that of a girl of 12. Only a very imperfect history could be obtained. There was a history of rheumatism early in life, but the story was a questionable one. About all that could be learned was that when she was three or four years old she had difficulty in walking, the joint involvement, therefore, apparently beginning in the legs; following this there had been progressive involvement of other joints which had attacked the hands only three years before. As exhibited, the child showed typical deformities of arthritis deformans in her hands, the right hand exhibited a marked subluxation of the carpus at the wrist, the metacarpo-phalangeal joints were flexed, and the interphalangeal joints were in straight extension. The left hand exhibited rather a rare deformity. There was marked adduction of the metacarpus and striking projection of the end of the ulna. The joints of the thumb and little finger showed decided enlargement and deformity. There was slight crepitation to be felt in the joints upon movement. The feet showed the characteristic turning in of the big toe, this member being, however, turned under the other toes. The tarsal bones were enlarged; the knees were large and exhibited some crepitation. Skiagraphs taken of the various joints by Dr. Goodspeed did not demonstrate anything satisfactorily. There was, however, in the skiagraph of the knee some evidence of proliferation.

The rarity of this disease in children was spoken of, and the necessity for distinguishing it from cases of chronic rheumatism in childhood, the deformity of which may closely resemble that of arthritis deformans. It is also necessary to exclude the effects of paralysis. The possibility of paralysis in this case had been carefully gone into and completely excluded. One point which was spoken of as important in the diagnosis between rheumatoid arthritis and paralysis was that mentioned by Garrod, who states that the abduction of the metacarpal bones, which is so common in osteoarthritis is not seen in the deformities following paralysis.

The case of esophageal stricture was that of a boy of 7, who, four weeks before his admission to the hospital, had accidentally taken a small amount of lye. His lips were burned at the time, and he vomited and complained of pain. He was given milk but vomited it, and subsequently he has been vomiting almost everything given him. The only evident physical

sign which he showed on admission was great emaciation. A small hard-rubber bougie was at once introduced, but met with an impassable obstruction nine inches from the teeth; all forms of bougies were used, but it was found impossible to pass even filiforms. An attempt was then made to use Koenig's method, and the child was induced to swallow a small silver ball about 8 mm. in diameter, attached to a string. The child chewed off the string during the night, and hence the ball could not be withdrawn; the same thing occurred the next night when a ball of the next size was used. An attempt was then made during the day, but the child soon chewed off this string also, and the remainder of the string and the ball were extracted as he was about to swallow the string. The method was therefore given up. The skiagraph which was taken by Dr. Goodspeed after filling the supposed diverticulum with an emulsion containing one half ounce of bismuth subnitrate exhibited a shadow opposite the fifth interspace of the ribs. This shadow had a somewhat rounded appearance, and was almost unquestionably due to a diverticulum situated at that point. Dr. Goodspeed in his report stated that he had previously had no success with the use of bismuth emulsions for this purpose, as they had always passed through the stricture to such an extent that no satisfactory results were obtained. In this case the results were entirely satisfactory.

Dr. PRENDERGAST.—I should like to ask Dr. Stengel whether a bacteriological examination of the fluid from the case of meningitis was carried out.

Dr. STENGEL.—It was. No sediment could be obtained, and no bacteria were found in the fluid. A guinea pig was injected with the fluid but the result was negative, the animal being still alive.

Dr. RUGH.—I should like to ask Dr. Stengel whether in the case of osteo-arthritis the course was one of steady increase or whether there were occasional acute exacerbations. The reason that I ask this question is that several years ago I saw a case of this kind in which the large joints were chiefly involved, no small joints excepting those of one thumb showing involvement. In this case there were repeated acute exacerbations of the condition with swelling and severe pain in the joints. Large doses of the syrup of hydriodic acid brought about complete recovery, the patient being now practically quite well.

Dr. D. J. M. MILLER.—I would ask Dr. Stengel whether there was any pain.

Dr. STENGEL.—The child has no pain now and apparently has had none of any consequence. So far as we have been able to obtain any history there have been no acute exacerbations.

Dr. ROSENTHAL.—The case of stricture of the esophagus interests me very much, inasmuch as during the last summer I received a number of communications from Dr. Francis de Torday, physician to the Stephanie Hospital, in Budapest, Hungary, requesting data concerning this affection: he presented a paper before the International Medical Congress at Paris on this subject. During the past summer Dr. Klein, a member of this society, was in Hungary and I requested him to see de Torday. He visited the Stephanie Hospital, and was struck with the number of cases of stricture of the esophagus he saw fully one-half the children there having this difficulty. The remarkable state of things was due to the fact that among the lower classes soap is an unknown thing, and for the purpose of cleansing lye is universally used, and little children often drink it accidentally.

De Torday's method was something new and was unusually successful. The method is familiar to the genito-urinary surgeons in the treatment of stricture of the urethra, and is as follows: A very small bougie, as small as a filiform, is passed; at the upper end of this is a screw joint by means of which a larger sized instrument is fastened to the first and to this a still larger one and so on. The bougies are pushed into the stomach and curl up there, the size of the instruments used being increased until the strictures is stretched to the normal caliber. The instruments are then withdrawn. The results are said to have been very good and it is possible that Dr. Stengel may find the method useful in his case.

Dr. JOPSON.—I exhibited to this society some time ago a child with an esophageal stricture on whom I had performed gastrostomy and had also attempted to use Koenig's method, having had a set of silver balls made for the purpose. We were unable, however, to persuade the child to swallow the balls, and as it was only four years of age the method had to be relinquished. In another case, in a child which I saw a few years ago, gastrostomy was performed and the subsequent history of this case has been that the child has become practically well of the difficulty in deglutition, swallows comfortably, and takes all of his food through the esophagus though the gastric fistula is still present. My own case has an interesting condition. She swallows well at times but at other times finds it difficult to get in food through the esophagus and then is of necessity fed through the gastric fistula which, in this case

also, is still open. The operation of gastrostomy alone, by the rest which it gives the esophagus, often causes marked improvement.

Dr. GRIFFITH.—The remark which Dr. Jopson has just made is one which indicates what I chiefly wish to say, that is, that the variation in the symptoms seen in these cases is good evidence that we cannot attribute the whole train of symptoms to cicatricial contraction alone. I have repeatedly observed what Dr. Jopson mentioned—that the difficulty in swallowing in esophageal stricture varies greatly from time to time. The cause of this is certainly not relaxation of the stricture, but rather, I think, inflammatory swelling or edema of the mucous membrane.

Dr. STENGEL.—I am disposed to think that the variations in ability to swallow are not due entirely to relaxation of the stricture. I would, however, call attention to the fact that in both adults and children the variations in symptoms may at times be attributed to the fact that slight stagnation in the diverticulum has been occurring unnoticed and finally the fermentative and other changes taking place in the stagnant food irritate the sac and regurgitation occurs. I think in many cases this is the explanation rather than any changes in the stricture, such as relaxation during the freedom from symptoms or swelling during the increase of symptoms. As to Koenig's method, I think that the experiences to which Dr. Jopson and I have made allusion to-night must not be taken as conclusive of the unreliability of the method. I am convinced that it has done good in a number of cases; I by no means intend to put it aside as unsatisfactory until I have tried it in adults or in children who are more tractable and will permit of a more satisfactory trial.

Dr. J. P. CROZER GRIFFITH presented a case of possible **Cerebellar Tumor**. He stated that there were a number of possibilities in the case but no certainty and that a definite diagnosis had not been reached. The child was six years old. Its previous history showed some diseases of childhood with no unfavorable results. The child had seemed well until January, 1900. Since this time she was said to have had severe headache daily, to have been restless at night, sleeping badly, and often crying out in her sleep. She was said to have vomited nearly every night, to have lost color, and recently to have been almost unable to walk. After admission to the hospital her vomiting was greatly improved by careful diet. She was able to walk better than the previous history had indicated but had, at that time, a decidedly staggering gait. The vomiting

persisted to some extent and did not seem to be due to any local irritation of the gastro-intestinal tract. The most striking symptom has been the ataxia, which is of the cerebellar type but shows a peculiar variability in degree. At times the child has a typical drunken gait; at other times the ataxia is very slight and scarcely noticeable. The digestive tract seems to be in good condition. The eyes, excepting for marked hypermetropic astigmatism, show nothing. There are no signs of any spinal disease, and the presence of excellent knee-jerks seem to exclude Friedreich's ataxia almost absolutely. Hereditary cerebellar ataxia would seem to be excluded by the absence of nystagmus, of oculo-motor symptoms, of involvement of the hands and of disorders of sensation. There are no signs of disease of the cerebrum or of the corpora quadrigemina, therefore the most probable condition seems to be a cerebellar tumor. The symptoms, however, are not at all distinctive of such conditions and the variations in the ataxia constitute a strange feature. It was at first thought that the gait might possibly be due to vertigo from gastro-intestinal disturbance and not a real ataxia. So far as can be determined, however, it is ataxia and not vertigo. There is slight Romberg's symptom at times, and besides this the occurrence of such severe vertigo as the result of indigestion is very improbable. The most probable diagnosis is intracranial disease, and probably cerebellar tumor.

Dr. PEARCE.—I should like to ask Dr. Griffith whether there was any history of traumatism.

Dr. GRIFFITH.—So far as we have been able to determine there is no such history. This point was carefully gone into and trauma seemed to be excluded.

Dr. PEARCE.—I would suggest the advisability of lumbar puncture as a therapeutic procedure. It is possible that the case may be one of internal hydrocephalus, and even if there is a tumor, tapping and relief of pressure might cause relief of the symptoms.

Dr. HARE.—I would ask Dr. Griffith whether there is an Argyll-Robertson pupil.

Dr. GRIFFITH.—No; it is not present.

Dr. HARE.—Its absence would seem to exclude any disease of the corpora quadrigemina. The child's gait, and particularly its tendency to go to the left seem very striking, and

while I am of course not justified in making a "snap diagnosis" I should certainly be inclined to believe that Dr. Griffith is right and that the proper diagnosis is cerebellar tumor; it is the typical gait that I have seen in cerebellar tumor and it is uncommon in other conditions. I should also like to ask Dr. Griffith whether there is any tubercular history.

Dr. GRIFFITH.—No; there is no history of tuberculosis.

Dr. S. M. HAMILL exhibited a case of cretinism in a six months' old child of Italian parentage. The mother had had two miscarriages and then had given birth to ten children at term. Five of these children were dead of unknown cause. The mother had had a convulsion preceding the birth of this child. The child had been breast-fed from birth. It had always had some cough and a wheezing respiration but it had never had coryza. When first seen on October 18th it was recognized at a glance to be a cretin; the broad, low forehead, the thick, protruding tongue, the condition of the skin and the hair and the local collections of fat were typical. The rectal temperature was slightly subnormal. The nails were of normal appearance. The thyroid gland was not palpable. Two days after the child was first seen it was given $\frac{1}{2}$ grain of desiccated thyroid gland thrice daily, and in the three weeks in which this treatment had been used the appearance of the child had changed remarkably; there had been a rapid loss of flesh, the local fat deposits had largely disappeared, the skin had become practically normal and the general appearance of the child's face was nearly that of a normal infant. Photographs were exhibited showing the appearance of the child when first seen.

Dr. HARE.—The case is of interest to me because it seems to be one in which it is justifiable to attempt transplantation of the thyroid. The operation is an old one, and while it has not always proved successful it has had valuable results in some cases and can be carried out without much danger to the patient. The reason that it seems advisable in this case is that because of the child's early age and of its social relations it seems impossible to continue thyroid medication over any very long period, and the only method by which the child could be assured of good health seems to be thyroid transplantation. It is of course possible that the operation might not be successful or might have to be repeated before it was successful. Nevertheless I think that repeated attempts are justified.

Dr. ARTHUR VAN HARLINGEN reported a case of **Pemphigus** and made some remarks upon the treatment of this affec-

tion. The case was that of a boy of five who, four days before he was seen, had an eruption of small blebs which were at first thought to be varicella but which had rapidly increased in size and had spread so that a large portion of the surface of all the limbs were involved the trunk remaining practically free. The child exhibited marked fever, delirium and stupor. There were variations in the temperature from time to time, but no definite relation between the eruption and the height of the fever except that at times with a new crop of blebs the temperature rose. It was thought that the severe constitutional symptoms in this case might be due to intoxication from the contents of the blebs. For this reason Dr. Van Harlingen opened the blebs and applied lint soaked in 1:2,000 bichloride solution, and covered this dressing with paraffin paper. This dressing was used on one arm at first and indifferent dressings were applied to the remainder of the lesions. There was a marked improvement in the general condition within twenty-four hours, and the eruption on the arm, which was treated with bichloride, showed decided improvement. After a few days this arm was so much improved that a zinc oxide dressing was applied. Bichloride dressings were then used on the remaining lesions, similar satisfactory results being obtained. Arsenic was not used at any period in the treatment, as it was desired to exclude any favorable effect from this drug. Strychnia and whiskey were used as stimulants while the child was seriously ill. As the skin lesions improved the nervous symptoms grew better; by the thirty-sixth day the temperature had reached normal and the eruption had entirely disappeared. When the eruption had become practically cured salicylated oil inunctions were used for a time. A slight relapse occurred six months later when the child was treated with 1:4000 bichloride dressings and the symptoms soon disappeared. It was suggested that the treatment mentioned might be valuable in other forms of bullous eruptions.



ABSTRACTS

PULMONARY TUBERCULOSIS IN INFANCY AND CHILDHOOD.

DR. FRANK P. NORBURY said that this disease is not a rarity among children, as the utilization of available post-mortem material shows. Heredity is of etiological importance, but it has lost its prestige as compared to its former standing. Modern scientific inquiry has shown that infection is the etiological factor *par excellence*. Direct heredity can account for a limited number of cases. The infection theory is proved by the lateness of the appearance of disease; few cases occur during the first year of life, but they steadily increase thereafter. The mode and route of infection are important considerations. Northrup, Carr and others have shown that tuberculosis starts more freely in the throat than elsewhere. Pulmonary affections, such as whooping-cough, influenza, etc., create favorable conditions for infection. Enterocolitis and gastroenteritis create portals for intestinal infection. Milk is a source of infection; likewise tuberculous meat.

The diagnosis may be confounded with cases of malnutrition. Bovaird says two evidences of early invasion are "progressive emaciation, not explained by other disease; continued elevation of temperature similarly conditioned." Differential diagnosis from bronchopneumonia can be made only by laboratory methods. Acute miliary tuberculosis and bronchopneumonic tuberculosis are frequently found in infants and children.

The complications are meningitis, empyema and involvement of bones. The prognosis is grave in most all cases, but lesions of lungs may heal under favorable conditions. With reference to treatment, prophylaxis during infancy should include attention from birth, if mother is tuberculous; also good hygienic, open-air treatment; climatic change, when possible. The symptomatic care should be the same for children as for adults. Good nutrition should be maintained and as little medicine given as possible. Creosote is recommended by the author, also simple tonics.

DISCUSSION ON THE PAPER OF DR. NORBURY.

DR. O. J. STEIN, of Chicago—I was very glad to hear the essayist mention in his paper, in considering the prophylaxis, the removal of adenoids and enlarged tonsils in children, because there is no question but that an enlarged tonsil or an adenoid in the naso-pharynx predisposes a great many children, otherwise susceptible, to the more rapid infection with tuberculosis.

As to medicinal treatment, while I have not had very much experience in treating tuberculosis in children by the method mentioned, I have had considerable experience in treating adults. I see a great many cases of pulmonary tuberculosis in connection with laryngeal symptoms, and in the last year and a half or more, I have adopted a method which I think is probably one of the best for quickly relieving the septic symptoms that we find in the first and second stages of tuberculosis. I refer to intratracheal injections. The treatment, as you know, has been re-

vived by Mendall, of Paris, although it originated with a doctor in this country by the name of Green, if I remember correctly, who resides somewhere in the East. He used a large laryngeal canula with a syringe, by which he injected the various oils directly into the trachea. Personally, I use a canula with a three to four inch vertical beak, and inject the mixture by means of a laryngeal mirror below the vocal cords. In some cases I use some hydrocarbon oil containing iodoform, about two grains, a little bromoform and the oil of cinnamon. In other cases I use menthol and guaiacol. The rationale of the treatment is just as apparent to you as it is to me. Of course, I use it in this way to obviate its administration to the patient by the mouth and thereby avoid disturbance of the stomach. It is surprising how quickly the patients react to the treatment. The symptoms disappear rapidly and the patients take on flesh. The appetite is increased and they tell me they feel remarkably improved, after having tried all other forms of treatment. I lay particular stress on the first and second stages of the disease.

As to menthol and guaiacol, I begin with from two to five per cent. of menthol and a half per cent. of guaiacol and run it up to fifteen per cent. of menthol and three per cent. of guaiacol to the injection. I have used this treatment in a few children, but the results have not been as good as in adults, for the reason of the inability to keep the children quiet. In children four years of age you can use the laryngeal mirror nicely and introduce it by that means. If you cannot use it thus, then pass the tube over the epiglottis between the cords as you would an intubation tube. The menthol produces laryngeal spasm sometimes.

DR. J. H. TAYLOR, of Indianapolis, Indiana—I was pleased with the concise and complete description given by the essayist, who mentions the fact that children over one year of age are especially susceptible to tuberculosis, when they contract such diseases as the infectious diseases. One point in particular should be observed more by physicians, as well as by the laity, and that is the contraction of such diseases as measles and pertussis. But we know that these diseases constitute a fertile soil for the development of tuberculosis. Broncho-pneumonia is one of the most common and fatal diseases connected with measles. Oftentimes a mother says: "I do not care if my child is exposed to measles; I want the child to have it while it is young." It is the duty of the physician to impress upon mothers the different ruts into which the child is liable to fall from contracting such diseases, and especially the complication broncho-pneumonia.

DR. EDWIN ROSENTHAL, of Philadelphia—I would like to emphasize treatment by strychnia in moderate doses, beginning, let us say, in a child of one year of age with one-hundredth of a grain, four times a day, going up as high as the fortieth of a grain, four times a day, and then the twentieth of a grain. Persistent stimulation is lasting. It is hard to apply medicines like guaiacol or menthol to the throats of children, or to get anything into the lungs or trachea.

If we take infants early in whom there is a lack of nutrition, and from the beginning change the diet and begin to build them up, giving them strychnine, we can do a good deal for them. I have had the opportunity

of making many post-mortem examinations on children who have died from ptomaine poisoning, alcohol poisoning, milk infection, etc., and have found that in the majority of cases they had tubercular peritonitis. In many of them I found the peritoneum studded with tubercular masses. The cause of the infection in most cases was due to infected lymph nodes. Whether they were the origin of the infection I am unable to say. I am persuaded that many cases of tuberculosis in children, where they suffer from ptomaine poisoning, from milk infection, etc., are really latent cases of tuberculosis. Take a child that has a temperature of 104° one day, 99° the next day, with an ill-defined course of fever; if this occurs in an adult it is not improbable that a diagnosis of typhoid fever would be made. But if the child's illness persists five or six weeks in a crowded tenement district, generally we will find tuberculosis is the cause, and the child perishes from it. These cases usually present an ill-defined incipient stage or running course of the disease.

In regard to infection, the milk supply is an important factor to consider. There are other diseases beside tuberculosis conveyed by milk. I have seen cases of streptococcic infection as the result of using milk that had been taken from a cow suffering from abscess of the udders. This milk has been brought to the City Laboratory in Philadelphia, and careful bacteriological examinations have disclosed streptococci in it. Cases of tuberculosis in crowded districts or cities occur more from lack of good nourishment than from inheritance or hereditary causes.

DR. PAUL PAQUIN, of Asheville, North Carolina— The chiefpoint which I wish to discuss is that we should, in my judgment, study the nature of human beings with reference to the cellular method of prevention of disease rather than consider man as a unit.

We must have a standard of nourishment as high as it can be maintained, and it should be the purpose of all physicians to strive to maintain that standard. Whether stimulation by strychnia is sufficient or not in treating these cases is not the only question, but one of many factors. We cannot depend upon any one remedy in the treatment of tuberculosis in children or adults. We must use everything that will contribute to do good. Strychnia is an excellent remedy, but there are others just as good for this disease.

With reference to intratracheal injections, I have used preparations of menthol for over eighteen months, and my results have been practically the same as those that have been referred to. I cannot say that I have had the beautiful results given to the world by Mendall. I have used iodoform; I have used the various essential oils that are supposed to be bactericides to some extent. The principal upon which these injections are used is that there will occur, after the injections into the trachea and bronchi, evaporation of the oil, the result being that the oil, being given off in the form of gas, will destroy the germs. It is not a difficult matter to make these intratracheal injections. I use nothing but a common, long-curved syringe, about eight or nine inches long. You can with this instrument inject the trachea with the aid of a mirror without any trouble.

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ORIGINAL ARTICLES

A CASE OF SUPPRESSION OF THE URINE IN A CHILD.*

By JOHN G. CECIL, B.S., M.D.,
Louisville, Ky.

I WAS called to Anchorage to see, in consultation with Dr. Thompson, a case that presented one feature which I have never observed before, viz., the length of time that the child lived after there had been total suppression of the urine.

This patient was sixteen years of age, a boy, of tuberculous parentage. The only history which would indicate any possible trouble with the genito-urinary apparatus was an irritation about the bladder with which he had suffered at different times and a decided tenderness and enlargement of the epididymis on either side.

The diagnosis that Doctor Thompson had made, and which I think was the most probable one, was that this was a tuberculous trouble of the testes, possibly involving the bladder, although I did not get any history that would allow me to make a positive conclusion as to tuberculous involvement of the bladder.

One week ago last Tuesday night this boy went to bed feeling about as usual, and during the night had some chilly sensations followed by slight fever. Nothing developed, how-

* Abstracted from proceeding of the Louisville Medico-Chirurgical Society.

ever, that would point to any special lesion until Wednesday morning, when it was noticed that he passed no urine. This condition continued until the following Tuesday, exactly seven days; he died on Tuesday night, just one week from the time he went to bed. Doctor Thompson assures me that not a single drop of urine was passed in that length of time.

I saw the patient Tuesday afternoon; he was then conscious but sleeping; he was a little slow in responding to questions when awakened but responded intelligently. He had no convulsions until Tuesday morning; he had one convulsion on Tuesday morning and I saw him later in the day. His pulse was rapid, weak, intermittent, but his respiration was not affected and had not been so far as I could ascertain; his tongue was coated and his breath had a slightly urinous odor; there was no special change in his pupils, and, altogether, his condition did not seem to be so very bad at that time, aside from the fact that all medication had positively no effect on the kidney secretion. He had been treated intelligently, as we know Doctor Thompson to be a very capable man, but with no response from the kidneys. Purgatives, diuretics and diluents had been administered with no effect.

I had a report from the doctor on Wednesday in which he stated that a short time after I saw the child, on Tuesday, he had a convulsion, which was quickly followed by another, resulting in a rather sudden death.

The most remarkable feature in the case is the extremely long time which this child lived secreting no urine, exactly one week, and it is for this reason that I put it on record.

REMARKS.

Dr. J. B. MARVIN.—I suppose pilocarpine was tried in this case. It has now been demonstrated that saline infusions act more promptly and more effectively than anything else in cases where the kidney action is suspended. I have tried it in two cases of coma in which it worked admirably. Barring pilocarpine, which acts very promptly in certain cases, nothing will act so quickly and cause return of the kidney secretion if there is any chance of its being returned as saline infusions.

Dr. A. M. VANCE.—Some years ago I had under observation a patient who had tuberculous disease of both testicles.

Operation was declined, and six months later operative intervention was advised involvement of the bladder occurred which was rapidly followed by suppression. He lived five days, having convulsions all this time, being kept under the influence of chloroform all the time during these five days.

Another patient had impermeable stricture of the urethra with retention of the urine. A perineal section was performed and he died on the ninth day after of total suppression. He was conscious up to a few hours of death.

In the first case mentioned the patient had tuberculosis of the bladder which occluded the ureters. He had convulsions for five days.

Dr. B. C. FRAZIER.—I nursed the second case mentioned by Dr. Vance the greater portion of the time for a week. He had no convulsions; he was in coma forty-eight hours before death took place. I feel sure that he passed no urine for eight days.

Dr. J. G. CECIL.—Pilocarpine had been used in the case reported with most excellent results; perspiration had been prompt and profuse. He had also been purged freely.

It is probable that if there was involvement of the bladder there must have been of course complete occlusion of the ureters and consequent double hydronephrosis; but physical examination did not show this. He simply had a little tenderness when pressed deeply over the kidney region. He had no tumor. What the cause of the trouble was and what relation the tuberculous disease of the testes had to it, I do not know.

Dr. WM. BAILEY.—In this connection I will mention a case that I saw not long ago. Being engaged in a case of appendicitis with Doctor Vance a woman was delivered for me by a friend of mine and I did not see the mother nor the child for forty-eight hours. There was a trained nurse in charge, who reported that the child was all right as to the passage of urine, etc., but getting possession of the case after two days my attention was soon called to the fact that there was very little if any passage of urine, and some simple measures were advised. The child went on two more days, I think, in this way

and they reported that there was not much urine passing; a little later on the deficiency being marked an examination showed distension of the bladder, and failing otherwise I endeavored, with the smallest catheter I could get, to relieve the child. Failing in that I called to my aid Doctor Vance about the sixth day, who found reason why I had not relieved the child.

I have doubts now whether any urine was ever passed, as the urethra was absolutely closed and could not be entered by any instrument whatever. At this time the child was relieved by aspiration; the bladder was relieved but the case terminated in death, I think on the sixth day.

Dr. A. M. VANCE.—I feel sure that no urine ever passed by the urethra in this case; whether there was any connection between the urinary apparatus and the bowel, and some urine passed in this way of course we have no data. The child's bladder was distended and I drew off 4 or 5 ounces of normal urine. The abdominal wall was edematous as was also the scrotum. I understand that this condition of edema was present at birth. The doctor who attended the labor reported this fact.

It is a very curious case to me and the only one I have ever seen where there seemed to be absolutely organic closure of the urethra.

A CASE OF MONGOLISM.

By W. WINSTON HALL, M.D., M.R.C.S.

London Eng.

Family History.—The grandfather is gouty; the father, five years before marriage, had an attack of gonorrhea which lasted three weeks; there is no evidence of syphilis.

Personal History.—The confinement was a difficult one. It lasted from a Friday to a Monday when, at 2 p.m., it was terminated by forceps; the skin was much torn about the occiput and temples; the head struck the mother as being compressed; the child was "born with a cold," and snuffles persisted till death. Five weeks after birth a rash appeared on

the face, but the doctor in attendance said it was of no consequence. The child was never able to suck the breast or a bottle; it was spoon-fed, and always with difficulty.

First Attack.—On December 3, 1899, when the child was 3 months old, it was noticed that the snuffling was exacerbated. At 8.30 p.m. it “suddenly seemed to choke,” and it became black in the face. There was no struggling, nor was there any croupy sound. The child was placed in a hot bath and I was sent for. Arriving a few minutes later I found a limp and pulseless child; the tongue was large and active; the pupils were medium and equal; there was no squint; the abdomen was distended and resonant; there was a small umbilical hernia; there was a basic systolic murmur. A glycerin suppository caused an action of the bowels at once; with the aid of warmth and brandy the child slowly rallied; next day it seemed to be in its usual state of health, and it was possible to pay more attention to its physical peculiarities.

Description.—It was a well-nourished child with a fat and somewhat conical head; the eyes were small and oblique; the epicanthic folds were marked; the tongue protruded from the mouth almost constantly; no absence of thyroid gland could be detected; the nasal orifices were large and upturned, but in the father and grandfather they are similarly arranged; the basic systolic murmur persisted; the abdomen was large and showed the umbilical hernia; the hands were fat and clumsy; the thumb and little finger seemed short as compared with the other digits; all joints were large and abnormally mobile. I could not satisfy myself that the skull was brachycephalic. Otherwise the child tallied well with the picture of mongolism drawn by Dr. Sutherland,* from whom I have learned all I know about such cases.

Second Attack.—On February 9th and 10th, 1900, it was noticed that feeding was unusually difficult. On the 10th, at 1 p.m., while it was lying in bed with its father he noticed that suddenly its breathing stopped, and, without cry or struggle, the child became limp and black in the face. On being placed in a hot bath it opened its eyes once, but when I arrived

* *The Practitioner*, December, 1899; *The Lancet*, January 6, 1900.

a few minutes later I found it dead. The face was pale; a big, dark tongue rolled from the mouth; there was no squint; the pupils were medium and the right slightly the larger; the thumbs were somewhat curved over the palms. Bodily conformation was as above noted, but it seemed to me that the head might now be described as brachycephalic. The occipito-frontal circumference was 14 in., and the occipito-glabellar diameter was $4\frac{1}{8}$ in. An inquest was deemed unnecessary by the coroner, and the family refused a post-mortem examination.

The etiology and the mode of death seem to me the interesting points about this case. With regard to etiology, there was a possibility, though not a certainty, of venereal taint, and there was undoubted compression of the skull at birth. The mode of death must be a matter of conjecture: I incline to the belief that the congenitally malformed heart became embarrassed, over-distended and suddenly ceased to act.

LIME BURNS OF THE EYE.

E. S. THOMSON, M.D., (*Postgraduate*, April, 1901), says: Treatment in lime burns of even moderate severity should be instituted at once and faithfully carried out, for we can never tell how serious the consequences may be. The lime should be picked at once or even scraped forcibly from the conjunctiva should it adhere in large cakes as it often does. It has been suggested that the cul-de-sacs should be flushed out with a mixture of vinegar and water, the idea being to neutralize the particles that are too small to be seen, but it is only reasonable to suppose that the small particles are quickly dissolved, and the large pieces are better picked out *en masse*, without the addition of another irritant, even though it be a weak one. The patient should be put to bed, and the eye cleansed constantly with warm boracic acid solution. The pupil should be kept dilated with atropin, and applications of hot water should be used to stimulate the cornea. Ice is absolutely contra-indicated. Internal stimulation should not be neglected. It is important to keep the cul-de-sac full of oil. A drop of castor oil or pure hydro-carbon oil is instilled into the eye every hour or two, or as often as necessary. It coats the cornea and keeps the rough and swollen conjunctiva from rubbing over it, and also renders the conjunctiva less likely to adhere. The course of healing is likely to be protracted, as it takes an eye a relatively long time to recover from a lime burn.

AN ERUPTION RESEMBLING PEMPHIGUS VEGETANS IN AN INFANT.

By E. A. FISCHKIN, M.D.,
Chicago.

Instructor in Skin and Genito-Urinary Diseases, College of Physicians
and Surgeons; Attending Dermatologist Norwegian Lutheran
Deaconess Hospital and United Hebrew Charities
Free Dispensary.

THE history of this child, a boy 5 months old, does not reveal any positive features to favor a diagnosis of the case. His parents are laborers and live under the most unhygienic conditions. They have six children, all of them healthy. Neither father nor mother ever had any skin diseases and there is no history of syphilis.

The baby was born with a healthy skin and continued so up to the outbreak of the present disease. Soon after birth it began to suffer from indigestion; it had diarrhea alternating with constipation. Five years ago the child took suddenly sick with cough and high fever. A physician diagnosed the disease as bronchitis. Two days after the onset of the bronchitis an eruption broke out on the skin and in a very short time took the character which it still partly presents today.

According to the mother's statement the eruption started with a red spot on the left buttock close to the anus; a vesicle appeared on the spot which soon broke out and gave place to a soft and moist mass, which began to spread peripherally; other like lesions appeared in the neighborhood, till, in about two days, buttocks, extremities and face were covered with patches to the same amount we see them today.

I saw the child for the first time two weeks ago at the West Side Dispensary. It was emaciated, had a temperature of 102°, weak pulse of 140 and rapid superficial respiration. Over the chest, bronchial rales.

The cutaneous lesions presented the following appearance: On the external surface and a little posteriorly on the left leg, right above the malleolus externus, two flat elevations, discoid in form and about the size of a quarter of a dollar, intersecting each other with their small segments; their steep

borders elevated about 2 mm. above the surface of the skin, with a slight depression towards the center; the surface of the patches was very raw and moist, without scaling or vesiculation, covered with a mucoid secretion, the features of these as well as all the other lesions presenting a striking appearance of condylomata lata.

In the middle of the calf was a large oval patch of vegetations about 2 inches in length and $1\frac{1}{2}$ in width, inside of which were about three to four ulcerations filled with a muco-purulent matter.

Above the knee another more elevated condylomatous patch covered with a thin scab, as if formed by the roof of a bleb. On removal of the scab the same moist surface.

There were in all about ten condylomatous patches on the left and about six on the right lower extremity, Abdomen, chest and back were free from lesions, so were palms and soles.

On the arms several condylomata; one of them above the wrist had a button form, that is, it had elevated borders and a nodular growth in the depressed center; the shape of this is still visible. The lesions on cheeks and forehead were covered with pus and crusts and were the only ones which did not present a definite condylomatous appearance. On the buttocks large condylomata on both sides of anus; at the periphery of one (left) lesion a small, flaccid bleb.

In both inguinal regions large vegetations with deep fissures, seemingly resulting from a breaking down of the masses, discharging a muco-purulent matter.

The differential diagnosis lay, in my opinion, between syphilis, some mycotic disease, preferably trichophytosis and pemphigus vegetans.

I had to exclude hereditary syphilis for the following reasons: (1) Entire absence of a syphilitic history and no traces of syphilis in the parents; (2) the child was born with a healthy skin and showed no eruptions whatever the first four months of life, the only symptoms of disease being indigestion and emaciation; (3) at present we find no mucus patches in the mouth, no patches or fissures about the commissure of lips, no lesions on palms and soles and no adenopathy.

I could not think of any mycotic disease, as I do not know of any which produces condylomata lata. I could have ex

plained an hyperplasia of the papillary body around the anus and in the inguinal folds by the irritation of the contiguous surfaces, but a condylomatous eruption on the skin where no folds or contiguous surfaces are present, and an entire absence of scaling and other symptoms of mycotic eruptions did not justify diagnosis of a mycotic disease.

The preceding emaciation, the starting of the disease with a bronchial catarrh, the appearance of the first lesion close to the anus, the uniformity of the lesions as condylomata and the existence of some, though few, blebs in the periphery of the lesions confirmed, in my opinion, the diagnosis pemphigus vegetans, and I thought the case interesting enough to demonstrate it to this society.

I had prescribed corrosive sublimate baths and dusting the lesions after that with a salicylated starch powder; internally I gave elixir calisaya as a tonic.

I had not seen the case for eighteen days, when the mother returned to my clinic and reported that she followed up the treatment and that the child was much better.

The skin, at least the condylomatous lesions, looked very much improved indeed; in many of the lesions I noticed signs of retrogression. The secretion ceased, the surface of the patches dried up, they diminished in height if not in size, some had radiating furrows seemingly produced by the drying up of the masses. Under the same treatment the lesions continued to improve till they assumed the appearance which you see now—dry, elevated patches with a smooth surface, with slight scaling and no crusting. I tried to remove the little I could for microscopical examination, but could find no mycelia or spores. The removal of a section of the skin was not permitted by the mother.

I shall certainly hesitate now, after the rapid improvement, to diagnose the case as pemphigus vegetans, but in spite of this improvement on a mercurial treatment I shall still exclude syphilis for the reasons mentioned above. From the present aspect of the lesions I should rather regard it as a trichophytosis.

But even if it be so, the course of the disease and its semblance to pemphigus vegetans seems to me interesting enough to justify my presentation of it to the medical society.

A CASE OF ACUTE TUBERCULAR PERITONITIS
WITH STRANGULATION OF THE APPENDIX
BY ADHESIONS WITH THE ILEUM.

By CHARLES GREENE CUMSTON, M.D.,
Boston, Mass.

IN August, 1900, I was asked to see a boy, aged 6 years, and obtained the following history from the attending physician. Three days previously, on returning from a walk with his nurse, the child was suddenly seized with pain in the right iliac fossa and vomiting. His physician saw him about two hours later, when he found great tenderness in the iliac region and by palpation what he took to be a mass about filling the right side of the pelvic cavity. The temperature was 38.5°C ., pulse 110, respirations 28. The child had been in very good health excepting that a slight diarrhea had been present for about six weeks, but as it presented no intensity no medical advice had been demanded.

On the next day the child appeared better; the vomiting had subsided but considerable pain was still present in the right iliac fossa. The temperature was 39.2°C ., but the pulse had dropped to 100. The general condition was good and the expression of the face was not changed; tongue somewhat coated; a liquid diet and ice-bags applied *loco dolienti* was the treatment carried out. But as the pain in the iliac fossa did not abate in the next twenty-four hours and as the temperature still remained at about 39°C . surgical advice was called for.

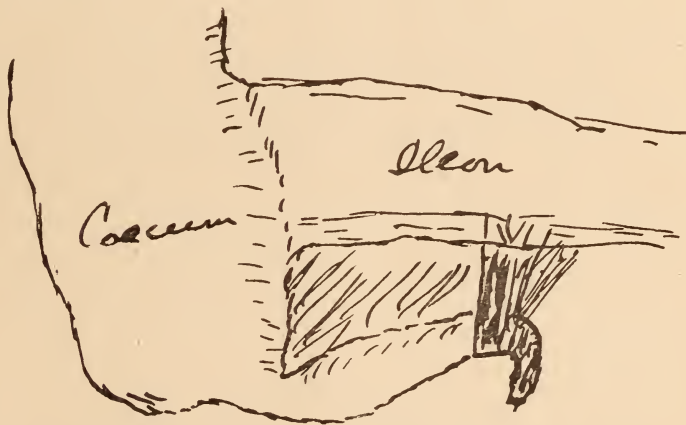
Upon examination I found a fairly well nourished child, somewhat tall for his age and very intelligent. By inspection the right side of the abdomen appeared slightly bulging but there were no enlarged subcutaneous veins to be seen. A satisfactory exploration by palpation could not be obtained on account of the rigidity of the rectus, and the boy would cry out with pain if any pressure was made over the right iliac fossa. The bowels were rather distended, but I was pretty well satisfied that I could detect a mass in the right iliac fossa and filling up the right side of the pelvic cavity. The temper-

ature at my visit was 38.8° C., pulse 99, respirations 24.

My diagnosis was gangrene of the appendix with a probable perforation but I believed that the abscess cavity was walled off. Operation was advised and accepted and was done at 8 p.m.

The usual incision for appendicectomy was made, but when the peritoneum was opened, out gushed about 200 cc. of a lemon-colored liquid and by inspection the serous membrane was found studded with miliary tubercles. Numerous soft adhesions covered the cecum down in the pelvis, but after these had been carefully broken down the cecum with the appendix was brought out of the abdominal incision. The cecum and ileum were studded with tubercles and were in a highly hyperemic condition. The appendix was bound down to the ileum by a band of adhesion about 2 cm. wide, which strangulated the tip of the appendix, but perforation had not taken place, although the end of the organ below the constriction was gangrenous.

The sketch here given will give a pretty good idea of the condition found.



The abdominal cavity was carefully explored but the numerous adhesions between the coils of intestine were respected, the cavity was wiped out with gauze sponges, while the right iliac fossa received particular attention. The abdominal incision was then closed with buried layers of catgut for peritoneum, muscle and fascia, with silkworm gut for the skin.

The after-history is short; the temperature soon reached

the normal and the patient recovered his health very rapidly. It is now over six months since the operation was done and no pelvic symptoms have recurred. The thoracic viscera are apparently in good condition and the boy is making flesh. Microscopical examination of the appendix showed the lesions to be tubercular. The specimen was covered with numerous tubercular follicles containing a number of giant cells. The vessels of the meso-appendix showed thickening of their walls and the lumen of some was obliterated.

I have reported this case as one of many where an exact diagnosis of acute affections arising within the abdomen is difficult and also because it is a beautiful example of those rather infrequent cases of acute tubercular peritonitis.

871 Beacon street.

CLINICAL AND BACTERIOLOGICAL DIPHTHERIA.

Dr. WINTERS' (*Med. News*, Nov. 17, 1900) in the discussion on diphtheria, at the New York Academy of Medicine, said that 104 cases of diphtheria on a hospital staff was a record-breaking number. Henoeh, in his text-book on children's diseases, says that diphtheria is not contagious except under special circumstances. He distinctly states that during thirteen years and a half of his service in the children's department at Berlin, where there were constantly diphtheria patients in the wards, not a single nurse or doctor contracted the disease. Trousseau, whose experience with diphtheria was very large, says in his text-book that diphtheria is very rare in hospital servants. It is therefore extremely surprising to find over 100 cases occurring within a few years in the service of a hospital at Boston. The reason for this surprising morbidity one cannot help but think, is due to the difference between clinical and bacteriological diphtheria. When bacteriological diagnosis came in the number of cases of diphtheria rose very markedly in a very short time. In the Boston City Hospital less than 1100 cases of diphtheria were admitted in four years, before the days of bacteriological diagnosis. Recently there have been 1900 cases in a little less than thirteen months. Physicians are counseled against the use of large doses of antitoxin. At the Willard Parker Hospital in New York observers have thought that they have noticed an increase of mortality as the dosage of serum was increased. Even the most enthusiastic advocates of the serum treatment do not claim that any better results were obtained with large doses than with comparatively small ones. Although it is being insisted more and more that the question of the curative effect of antitoxin is absolutely settled, as a matter of fact there still remains reasonable doubt in this matter.

TUBERCULAR DISEASE OF RIGHT HIP AND LEFT KNEE.*

By Dr. J. M. KRIM, M.D.,
Louisville, Kentucky.

ABOUT the beginning of March, this year, a child twelve years of age came under my care. She had not been well since the November prior. She had suffered with pains in different parts of the body. At first, the mother thought these were "growing pains" and paid no particular attention to the matter. They finally called in a doctor who treated the case apparently with some degree of success. The child complained of pain in the left shoulder at one time, then the right hip, then the left knee, etc. After some time the pain all disappeared except in the left knee.

In March, when I first saw the case, the left knee was somewhat thickened, swollen, and there was some pain, but pain was not increased upon pressure. She also complained of pain in the right hip. I thought probably the trouble was due to rheumatism, and gave her anti-rheumatic treatment—salicylate of soda—which was followed up by complete relief from pain in the knee, nor did she have any pain anywhere for three or four weeks afterward. I gave her tonics in the meantime, trying to build her up. Pain finally returned and was accompanied by decided swelling of the left knee.

I questioned the parents particularly in regard to the family history to determine if there was any tuberculous tendency, but nothing of this kind could be elicited. I put the knee in plaster of Paris, and continued the use of reconstructives. Then the right hip began to swell without any especial pain; pain steadily increased until two months ago, when I aspirated the hip, drawing off about six ounces of fluid.

I told the family at this time that I desired a consultation, and one of our local surgeons was called in. After a careful consideration of the facts he stated that he thought it was a tuberculous trouble of both the knee and the hip. There was

* Reported to the Louisville Clinical Society.

still considerable fluctuation, even after I had aspirated six ounces of semi-purulent matter. The surgeon advised that an opening be not made, that the case did not demand surgery.

I made extension by weights to the hip, which gave the patient some relief, and the surgeon agreed that extension ought to be continued, but under no circumstances should the abscesses be opened. On account of pain which seemed to be aggravated in the knee by the plaster of Paris dressing, this was removed. The knee was in about the same condition as when the plaster dressing was first applied. Extension was made to the knee. Another surgeon was called in who also advised against opening.

A few days ago aspiration was again practised, and about four ounces of fluid was withdrawn from the hip. The patient does not complain of much pain in the hip; some tenderness is manifest upon manipulation and deep pressure on the outside just above the trochanter.

The question is, what had best be done in this case? I cannot get her out of bed; plaster of Paris dressing cannot be used on either the knee or hip; the extension apparatus is still being used, and the patient is doing fairly well. She is taking cod-liver oil, iron, etc. Her temperature has varied from normal to 103° F. She has been given carbonate of guaiacol and creosote. She is now eating fairly well. I have thought of using Betz' hot air apparatus in this case, but not being able to secure one, the method has not yet been tried.

DISCUSSION.

Dr. J. W. IRWIN. —The history of the case as detailed leaves us so much in doubt that it is hard to know what to say about it. To find the tubercle bacillus in the pus drawn off from cases of this kind is something unusual (because, generally speaking, the bacilli are lost sight of in these formations). The abscesses which formed in this case were rather singular formations, following pain in various localities, making the case one of unusual interest, especially as we have not a clear history. If we had had in this case a history of tuberculosis in some member of the family for two or three generations preceding the birth of this child, we might have surmised more clearly, as we can only surmise. The essayist has reported the case as

he found it, perhaps from the best information at his disposal, still there is something wanting particularly as to treatment. The first thing that impressed me was that this case might have been due to some traumatism about the foot, ankle, knee, or hip, or end of the spine, and from that we had the starting point of multiple neuritis.

I saw a case from Tennessee a short time ago, a boy eleven years of age, who had been riding the bicycle. He had one hundred and fifty abscesses before I saw him, about the knee, the hip-joint, over the crest of the ileum, the gluteal region, along the spine, etc. I opened a number of abscesses. He had the evidences of rheumatism. He had been riding a bicycle and the jarring over the rough roads had brought about multiple neuritis, followed by abscesses. He also suffered from local paralysis. I did not regard the case as anything but multiple neuritis from the beginning. The contents of the abscesses was what we know as laudable pus; it was not very offensive; some of the cavities, when opened, discharged two ounces. After treating the patient ten weeks he was entirely well. I did not use any anti-rheumatic or anti-tubercular treatment. I simply adopted such measures as would improve his general health; he was kept in a hot bath one hour a day, one-half hour in the morning and one-half hour in the evening; he was given a nourishing diet together with egg-nogg, milk punch, etc. I think the essayist will find that he has a case similar to the one I have mentioned to deal with.

Dr. J. R. WATHEN.—There is no question in my mind as to the character of the trouble in the case reported. It is most certainly tuberculous; the semi-flexion, the apparent shortening, and the history of the case all point plainly to that conclusion. I have examined a great many specimens of pus from the so-called cold abscess for the tubercle bacillus, but have never found it. In regard to treatment: All surgeons are agreed that these abscesses should not be opened, but they may be aspirated, and this should be done under the strictest care. By opening, it is true, the tuberculous deposit may be removed, but you leave an open wound and thus subject the patient to further infection. If you open and attempt to wash out and drain, you are doing a dangerous thing, in fact, few surgeons indorse that method of treatment. If they do that

operation they are careful to thoroughly cleanse the abscess, they curette away all diseased structures, wash out with carbolic acid and follow this with alcohol. The danger is not in the development of general tuberculosis, but in sepsis. Most surgeons will agree with the statement that these abscesses may be aspirated safely.

THE PRESERVATION OF THE TEETH OF SCHOOL CHILDREN.

Rules recommended by the School Children's Committee of the British Dental Association and circulated for the information of managers and teachers of the national schools in Ireland:

"Without good teeth there cannot be good mastication.

Without thorough mastication there cannot be perfect digestion, and poor health results.

Hence the paramount importance of sound teeth.

Clean teeth do not decay.

The importance of a sound first set of teeth is as great to the child as a sound second set is to the adult.

Children should be taught to use the tooth brush early.

Food left on the teeth ferments, and the acid formed produces decay.

Decay leads in time to pain and the total destruction of the tooth.

The substance of the following rules should therefore be impressed constantly upon all children:

1. The teeth should be cleansed at least once daily.
2. The best time to clean the teeth is after the last meal.
3. A small tooth brush, with stiff bristles, should be used, brushing up and down and across, and inside and outside, and in between the teeth.
4. A simple tooth powder or a little soap and some precipitated chalk taken up on the brush may be used if the teeth are dirty or stained.
5. It is a good practice to rinse the mouth out after every meal.
6. All rough usage of the teeth, such as cracking nuts, biting thread, etc., should be avoided, but the proper use of the teeth in chewing is good for them.

When decay occurs it should be attended to long before any pain results. It is stopping of a small cavity that is of the greatest service.

In 10,000 children's mouths examined 86 of every 100 required skilled operative treatment."—*Journal of the British Dental Association.*

REPORT OF A CASE OF LARYNGEAL STENOSIS.*

By I. A. ABT, M.D.,
Chicago.

Professor of Diseases of Children, Northwestern University Woman's Medical School; Assistant Clinical Professor, Diseases of Children, Rush Medical College; Attending Physician, Michael Reese and Cook County Hospitals, etc.

SOPHIE C., aged 13 months, was admitted to the Michael Reese Hospital, December 18, 1900.

Two weeks previous to her admission it was noticed that she suffered from a distressing cough and had symptoms of an acute rhinitis, with a slight elevation of temperature. Dyspnea appeared two days before admission to the hospital. This gradually increased in severity. On admission well-marked symptoms of laryngeal stenosis were present. The respirations were extremely rapid, the chest-walls showed marked retraction with each inspiratory effort; cyanosis was marked, the pulse was rapid, and temperature elevated, though the extremities were cold. The child was in imminent danger of death by suffocation. Examination of the pharynx showed that no membrane was present.

The child was prepared in the usual manner for the introduction of the intubation tube. She was placed on the lap of an assistant, the gag was introduced and held by a second assistant, and the one-year-tube, the smallest of the O'Dwyer set, was selected for introduction. The tube could be introduced into the orifice of the larynx with little more than usual difficulty, but it could not be pushed down without using an amount of force which seemed unjustifiable. Attempts were made to introduce the tube while the child was in the recumbent position, with the tongue pulled forward and held by an assistant. The same obstruction presented itself. It was concluded that some obstruction existed in the larynx which made the introduction of the tube impossible and its forcible pushing downward fraught with danger. Intubation was given up

* Read before the Chicago Medical Society.

and tracheotomy was performed. The child died in 24 hours.

In less than two hours after its death the larynx was removed from the body. Attempts which were made to introduce the tube at this time proved futile. I have no hesitation in maintaining that with the ordinary instruments and tubes the operation of intubation in this case was an impossible one.

Most American writers on the subject of intubation are very sanguine concerning the ease with which the operation may be done by any one who has had previous experience or sufficiently understands the technic. The production of false passages and the possibility of occluding the lumen of the larynx by crowding down membranes are considered the common, if not the only complications. During five years' connection with the health department of this city I have performed many intubations. This is the first case where the operation was impossible.

Dr. Carstens (Jahrb. f. Kinderheilkunde, Vol. 36), a former assistant of Professor Heubner, at the Leipsic Clinic, reports two cases of impossible intubations in a series of over 200 cases. Dr. E. F. Ingals (Annual of Universal Med. Sciences, 1891), reports one case of impossible intubation. Prof. Runke, of Munich (Jahrb. für Kinderheilkunde, Vol. 34), whose experience, perhaps, has been as extensive as that of any clinician, says that there are cases where the insertion of the tube is impossible even by the most skillful operator. Ganghofner in Prague (quoted by Ingals) reports two cases where intubation was impossible.

Pathological Conditions of the Larynx. The lumen of the larynx was greatly diminished and was opened posteriorly, there was no edema. It was observed that the mucous membrane was covered with a smooth, white, glistening adherent membrane.

Histological Examination of the Membrane. Examination shows the membrane to be of a fibrinous structure, of considerable thickness and containing numerous micro organisms. Diplococci predominate and occur in the upper layers and at the periphery; other micro organisms are present though they lie more deeply imbedded in the tissue. A culture was made from the interior of the larynx after the death of the child and was inoculated upon blood serum. Microscopical examination of the growth showed the presence of staphy-

lococci and diplococci. These latter occurred in pairs or formed tetrads; they were of variable size, though large, rounded forms predominated. Dr. W. J. Class, who studied these growths, recognized the diplococci as those which he had previously described under the name of *diplococcus scarlatinae*.

DISCUSSION.

Dr. WILLIAM K. JAKUES.—I wish to thank Doctor Abt for presenting this case to the Society. The cases in which laryngeal stenosis is complicated and intubation difficult are usually not reported. I have had two cases which, to judge from examination of the specimen, were similar to the one described by Doctor Abt.

One was in the daughter of a fellow physician. I attempted intubation, but met with strong resistance. The tube could be placed between the vocal cords and pressed down a short distance, but would go no farther. I was fearful of making a false passage and did not try to push the tube down, but performed tracheotomy at once and the child died. In the culture I found the pneumococcus with the Klebs-Loeffler bacillus, which is always a serious complication. It was to this mixed infection that I attributed the death, and not to the tracheotomy.

The next case was a grandchild of Doctor Guerin. In attempting intubation I found an obstruction for which I was prepared, having had a smaller tube made than No. 1. I reasoned this way, that the diphtheritic process or exudate, coming at the entrance of the trachea, and involving the vocal cords, would produce an amount of stenosis which would make it difficult to insert the tube. If the child is two or three years of age, we can use a No. 2 tube; if it cannot be introduced, we can use a smaller tube and that may go in; but when the child is a year old, and the exudate is such as to prevent the entrance of the tube, there is no smaller tube in the regular intubation sets to meet the condition. In this second case I had a smaller tube than No. 1 and was able to force it beyond the constriction. I stayed by the child for ten days, and eventually he recovered.

Tracheotomy in children under a year or a year and a half has a mortality of nearly 100 per cent., so it is wise to avoid it

if possible. There is also a higher mortality following intubation than is generally understood by the profession. In my work for the health department I learn of many cases of intubation ending fatally. I believe this is due to two factors: The first is the number of inefficient cheap intubation sets thrown upon the market. The only recommendation for some of them is that they are cheap. The second factor is that a great many entertain the idea that intubation is a simple operation. It is true that in a number of cases a physician who has had only a limited amount of practice on the cadaver or mannikin is able to insert a tube in simple stenosis of the larynx, and by the use of antitoxin the child's life may be saved. But in a certain per cent. of these cases complications will arise which demand all the skill and judgment gained only by considerable practice and experience.

There are more difficulties arising from improper tubes than almost any other thing. I have found in all intubation sets that there are not enough small tubes with slight variations, and so I have had the instrument-makers make a tube smaller than No. 1, one between No. 1 and No. 2, and one between No. 2 and No. 3. In this way I have been able to intubate successfully when I am sure I could not have done so without these extra tubes.

I remember one case where No. 2 tube was too large and a No. 1 had to be used. On attempting to withdraw No. 1 it would push down into the trachea to the bifurcation. I attempted tracheotomy, but the child died before I got through. This set me to thinking, and I planned a method of procedure to meet such a condition again, and it came very soon. I placed the child on an ironing board, head downward, and manipulated the trachea until the tube moved away from the bifurcation a little distance; then the child could breathe easily. Then I allowed it to rest and recover from the effects of the attempt to extubate. Then the child was fastened firmly from the shoulders down to the ironing board by a sheet bandage. I had my assistant turn the child upside down and by massage of the trachea brought the tube to the vocal cords. With the child still inverted, I extracted the tube with the O'Dwyer extractor. I have done the same thing successfully once or twice since.

This brings me to the subject of the O'Dwyer extractor.

When we consider how Dr. O'Dwyer spent a lifetime in perfecting this operation, and that he took casts of more than one hundred tracheas in order to get the proper form of tube, we should hesitate to throw away his experience. I think his instruments to-day are the most perfect of any that are made, especially the tubes. I find less difficulty in using his tubes than those of any other set. The French instruments are made with an extractor and introducer combined. The introducer works all right, and the instrument can be used for extracting in a certain number of cases, especially when the opening is high in the throat, but when the opening is low and attempts are made to go down in order to get hold of the tube, this instrument fails. As an extractor, I have found nothing to equal the O'Dwyer instrument. By being prepared to meet these complications there is less chance of failure.

DR. WILLIAM E. CASSELBERRY.—I have met with a good many difficulties of various sorts in performing intubation, and I have not been impressed with the idea even yet that intubation is an easy thing to do. One never knows what will happen in the course of the few seconds in which the tube is being placed in position. Two of the earliest cases, years ago, in which I had an opportunity to make this operation, were those in which loose membrane was pushed down immediately by the tube and the child asphyxiated. Under those circumstances the tube will enter half way or some distance, and you can see from the asphyxiated condition of the child what has happened. You have detached a piece of membrane which obstructs the tube, at the same time it is an impediment to the entrance of the tube. The only remedy for this is tracheotomy. In both of the cases I speak of I was able to resuscitate the children by artificial respiration after a hasty tracheotomy. One patient lived, the other died.

Another impediment to intubation is spasm. I was formerly skeptical with reference to spasms as an impediment to the introduction of the tube until I had a case in an adult twenty-two years of age, who was suffering from diphtheria of the pharynx and larynx, in whom I operated under laryngoscopic observation. The first intubation was easy; the tube slipped in unobstructed. She coughed it out in a few hours, and it had to be reintroduced when I met with an obstruction.

I took the mirror to see what was the cause of the obstruction. As I endeavored to insert the tube under the observation of the mirror, the larynx contracted like a spincter, not merely the vocal cords came together but the ventricular and the ary-epiglottic folds around the top of the larynx contracted. The tube if put at the top would stay there, or if I altered its direction, would slip off to one side or other. This impediment was overcome by maintaining the tube in a position at the top of the larynx until the patient became asphyxiated, when she finally opened the larynx and the tube passed through. The spasm was so well demonstrated in that case that I do not any longer doubt the possibility of its occurrence in children. If it is held steadily in the correct position a few seconds, it will usually slip in. The remedy, therefore, is steady but gentle pressure in the position which I have indicated.

Another impediment which I have thought I encountered in cases of intubation was a false direction of the tube. One has to direct the end of the tube anteriorly in order to get it to enter the larynx, and in order to avoid its slipping into the esophagus. This angle, if too acute, or if the child's head be thrown backward too far, may cause the distal end of the tube to come in contact with the inner anterior surface of the cricoid cartilage. I have overcome this impediment by wiggling the tube a little back and forward, or by changing the position of the child.

From an examination of the specimen of the larynx and windpipe of Dr. Abt's case, it can be seen it was a very small aperture through which to pass even the smallest sized tube. It was an unusually small larynx, made still narrower by swelling, and for these cases one should have still smaller tubes than the smallest usually furnished in cases.

Dr. ABT, in closing the discussion, said: I fully agree with Dr. Jaques when he says that it is difficult to improve on the O'Dwyer instruments and tubes. I have never had occasion before now to use a tube smaller than the one designated for a child one year of age. I have intubated a child three months old with a tube of this size, without the least difficulty. O'Dwyer did not provide any tube smaller than the one-year size, and there are none to be obtained ready-made in the shops.

EDITORIAL COMMENTS

Mayo Robson on
Pancreatitis

In an address delivered before the American Surgical Association (*British Medical Journal*, May 11, 1901) Mayo

Robson enters fully into the discussion of pancreatitis and in a forcible manner points out many things which have been previously neglected or misinterpreted in regard to this affection. He considers it especially remarkable, in view of all that has been written regarding infective and suppurative catarrh of the biliary passages, that similar affections of the pancreatic duct have been overlooked. It is all the more remarkable when we consider the close relationship of the common bile duct and the pancreatic duct, and that anything that obstructs the former at its lower end must of necessity obstruct the latter. Robson says that only diseases producing gross lesions, as calculi, cancer, acute pancreatitis, cysts, etc., have been considered by writers of text-books. Yet the pancreatic duct participates in the same inflammatory processes as the bile ducts. The cause of the failure to recognize obstructions of the pancreatic duct, he attributes to absence of a pathognomic sign, as jaundice. Just as in the liver, we may have simple, infective and suppurative catarrh of the ducts as well as inflammations of interstitial tissue, so we may some day come to recognize the same as occurring in the pancreas. The occlusion of the pancreatic duct is evidenced by rapid loss of weight, fat necrosis and the occasional occurrence of glycosuria, lipuria and fat in the stools. The author again calls attention to the fact first pointed out by Walker that in pancreatitis, even in the absence of jaundice, the movements are of an exceedingly pale color. He also calls attention to the tendency of these patients to bleed profusely, even in the absence of jaundice. Some cases of pancreatitis may be associated with local hemorrhage, and sometimes hemorrhage may occur in the pancreas without known cause. He considers that pancreatitis should

be divided into acute, sub-acute and chronic, and that the so called hemorrhagic pancreatitis should be regarded as a variety of acute pancreatitis.

In regard to fat necrosis, it would seem probable that when the pancreatic juice fails to be discharged into the intestine it escapes into the surrounding tissues and there causes a separation of fat into fatty acids and glycerin. The latter is absorbed but the former, being insoluble, remains in the cells and combines with calcium salts to form yellowish-white patches of various sizes in the sub-peritoneal fat, omentum, mesentery, etc. Mr. Robson thinks it possible also that the glycerin set free in the tissues may have something to do in the production of the general hemorrhagic tendency existing in diseases of the pancreas. Glycerin when used in the uterus to produce abortion or when injected along with iodoform in the treatment of tuberculosis has been known to produce hematuria. The presence of glycerin in the blood in these cases has not been demonstrated. Besides the above-mentioned symptoms there are, of course, others, as fever, tenderness, tympanites, vomiting, etc., which vary with the acuteness and severity of the attack.

To cure pancreatitis surgical measures will usually have to be resorted to. The treatment of acute pancreatitis differs little from that of peritonitis. In any case the diagnosis may be confirmed by an anterior incision and if an abscess be present it may be aspirated and the cavity drained by this route, or better an incision for drainage may be made behind in the right or left costo-vertebral angle. The results in cases of chronic pancreatitis treated surgically by Robson have been most encouraging, as of 22 cases, only one died as a result of the operation (he was nearly dead before it) and two within a few months. The others were permanently cured. T.

Dangers from Milk

In an article entitled "Conclusions Based upon Three Hundred and Thirty Outbreaks of Infectious Diseases Spread Through the Milk

Supply" (*American Journal of the Medical Sciences*, May, 1901), Dr. George M. Kober introduces his remarks by briefly setting forth the possible ways in which milk may be dangerous to health:

1. Sour milk or milk on the point of souring is liable to produce gastric and intestinal catarrhs of acute or chronic character; as an example we have cholera infantum. The causes of souring are lack of cleanliness and high temperature. The author quotes Bitter as claiming that milk is unfit for food which contains over 50,000 bacteria per cc.m. However, as the number of bacteria can be reduced to from 4,000 to 6,000 per cc.m. with care the above figure would seem, in our opinion, to be far too large to willingly put up with.

2. Milk may be unfit for use and cause sickness because the animals are improperly fed or are being treated with the various potent therapeutic agents which are eliminated through the mammary gland. The writer states that symptoms of poisoning from arsenic, copper, iodine, lead, mercury, tartar emetic, atropine, colchicum, croton oil, strychnine, veratrum viride, etc., have been thus occasioned.

3. Milk may be the product of a diseased animal. The author states that local diseases of the udder, as garget, which causes pseudo-diphtheria, as well as general diseases may be thus conveyed to the consumer. Among general diseases are "septic fevers, foot-and-mouth disease, cowpox, anthrax, pleuro-pneumonia, rabies and tetanus."

4. Tuberculosis he considers to be so frequently acquired from milk as to deserve a separate section.

5. Finally, but by no means least important, milk may acquire specific infective properties after it leaves the udder of the animal. The epidemics discussed in the paper are chiefly epidemics of typhoid, scarlet fever and diphtheria.

To the above headings might be added sophistication with chemicals; those most used at the present time are borax, boracic acid and formalin. Their dangers were discussed some since in this department.

T.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, December 13, 1900.

THOMAS S. SOUTHWORTH, M. D., CHAIRMAN.

Marked Dilatation of the Colon of Seven Years' Duration.—Dr. W. L. STOWELL presented a boy of nine years who had had during his first two summers an attack of summer complaint. During the first year of life he had been nursed; after this he had been given very freely of cereals, yet in spite of this, he had exhibited obstinate constipation. When first seen about two weeks ago, the bowels had not moved for about a week previously, and in addition to the general enlargement of the abdomen, the colon could be seen, so great was the dilatation. The child was then in a semi-stupid state, and this, his mother said, had always been his condition, when greatly constipated. The use of a high saline enema brought away a few scybalous masses and a quantity of semi-black material. His abdomen now measured 60 cm. in circumference; when first seen, it had measured 71 cm. There was no stricture of the rectum, and there were no hemorrhoids. Apparently, the muscular fibres of the colon had become so stretched that they no longer were capable of exciting normal peristalsis. This child had no dyspepsia or flatulence, except when the bowels failed to move for a number of days. It was probable that the patient would benefited by massage and general tonics.

Dr. H. KOPLIK said that he believed there was a case of excessive dilatation of the colon on record in this country. It would be interesting to introduce a gastroduaphane in this case.

Dr. J. J. WALSH said, there was a case in France on record in which a child finally had only six stools a year. The autopsy had shown an obstruction of the bowel just above the sigmoid flexure.

Dr. H. ILLOWAY was inclined to think there was considerable dilatation of the stomach in addition to the dilation of the bowel, and that the mere passage of a stomach tube would serve to clear up the diagnosis,

Dr. STOWELL, in closing, said that the rectal tube had passed up above the sigmoid flexure without meeting with any resistance.

Constitutio Lymphatica.—Dr. D. BOVAIRD presented specimens taken from a nursling, four months old, in the Foundling Hospital. The child had had a sudden convulsion, and had died almost immediately. At the autopsy a marked cranio-tubes and slight enlargement of the epiphyses had been noted. The brain was negative. The thymus gland was very greatly enlarged, almost covering the heart. There was nothing abnormal about the larynx, trachea or bronchi. There was moderate enlargement of the cervical lymph nodes and of the bronchial lymph nodes. The mesenteric lymph nodes were still more enlarged. The spleen was larger than normal. In the bowel both the solitary follicles and Peyer's patches were enlarged. In the majority of the cases of thymic asthma it had been found that the enlargement of the thymus did not seem to be sufficient to cause pressure and death. The enlargement of the thymus gland had consequently been looked upon by many as only a part of the general hyperplasia of the lymph glands, but this was not the condition in the case under discussion. In a certain number of cases there had been more or less difficulty of respiration for some time before death.

Dr. F. HUBER said that recently he had seen three cases of laryngismus stridulus. Unfortunately at the autopsy one could not estimate accurately the size of the thymus during life because of the vascularity of this organ.

Dr. L. EMMETT HOLT said that much light was needed on the subject of sudden death among infants. He had seen four cases somewhat similar to the one just reported, and he was not yet convinced that the general lymphatic condition was more important than the size of the thymus. The sudden development of severe and alarming symptoms, and the sudden fatal termination, usually in convulsions, were very characteristic. In many other cases he was sure the same enlargement of the lymphatic structures had been seen without these symptoms, and yet there was no enlargement of the thymus. The rachitis and institution life would account for much of the condition found in the lymphatics. It was very hard to say what was the cause of the fatal attack. He had seen one or two cases in which the upward pressure of a distended stomach had seemed to be the cause; in others an enlarged colon or some minor indigestion had seemed to be the cause.

Dr. S. WELT-KAKLES said that last spring an exceedingly robust and healthy looking baby of five months had been brought to the Mount Sinai Hospital dispensary with a history of cough extending over a few weeks. While the child was being undressed for examination it had been seized with an epileptiform convulsion, and had died almost immediately. The autopsy had been conducted very carefully by Dr. Libman, and had revealed an enlarged thymus and a general hyperplasia of the lymphatic nodes. In addition, there was an edematous condition of the brain, and as others had reported the same thing, it might be considered as an accompaniment of such cases.

Dr. H. KOPLIK said that Jacobi, in his collection of thymuses, had some that weighed 40 grammes. In autopsies on cases of pneumonia and of gastro-enteritis the thymus would be found very large, and this proved a stumbling-block in our efforts to comprehend the nature of this class of cases. The thymus presented this evening was one of the largest he had ever seen.

Dr. H. D. CHAPIN said he had reported a case which had occurred in private practice about ten years ago. The child was a girl of two or three years, who had had a slight bronchitis. On one occasion she had been seized with a coughing fit of average severity, and had died almost instantly. The autopsy had revealed the presence of an enlarged bronchial gland pressing upon the laryngeal nerve. An abscess had formed there.

Dr. H. HEIMAN expressed the belief that the thymus, when enlarged and engorged probably pressed upon the recurrent laryngeal nerve and so caused death.

Dr. J. J. WALSH raised the question as to the use of the thymus, and remarked that the cases that he had seen had seemed to indicate that the lymphatic enlargements were the result of infection. Possibly a condition of the stomach or bowel might account for the infection.

Dr. BOVAIKD said that in this case the bowel and stomach had appeared particularly normal, and there was absolutely no edema of the brain. It was quite natural to come back to the enlarged thymus as the cause, but it did not seem to him sufficient to explain the sudden death on a purely mechanical theory.

Remarks on the Diagnosis of Adenoids in Infancy.—

Dr. WALTER F. CHAPPELL said that the objective symptoms of adenoids were mouth-breathing, snoring at night, noisy respiration during the day, vocal changes, sneezing and reflex neuroses. The principal subjective symptoms were headaches, a stuffy feeling in the nose, dryness of the mouth and throat in the mornings, impairment of taste, and more or less stupidity and depression. In his experience it had not been

possible to demonstrate the presence of adenoids in infants of three or four months. Up to two years ago no instruments were at our disposal in this city which were small enough to be used in the post-nasal space, and as the finger is too large, he has been curious to know what instrument had been used by others in the infants on whom they had operated. Other causes of obstruction and noisy respiration were lymphatism, lithemia, syphilitic or gonorrheal rhinitis, congenital atelectasis, digestive disturbances, congenitally high-arched palate, unusually small post-nasal space, marked anterior projection of the bodies of the cervical vertebrae, malformation of the soft palate, and hypertrophy of the tongue. In all degrees of obstruction above the uvula the infant was obliged to remove the nipple from the mouth every few moments to obtain air. Recurrent naso-pharyngitis was frequently seen in lithemic infants. The lithemic condition was usually confined to the superficial tissues, but might extend more deeply, giving rise to a retropharyngeal abscess. Congenital atelectasis produces respiratory symptoms which might sometimes be mistaken for adenoids by competent observers. In some infants there were digestive derangements associated with vomiting of curdled milk. Congenital hypertrophy of the tongue was rare, but he had seen two examples of it. Children between six months and three years of age might suffer from the foregoing disorders. Large tonsils alone might produce snoring or mouth-breathing. Hypertrophic rhinitis was very common in children, and was usually manifested by enlargement of the anterior and posterior ends of the inferior erectile bodies.

The Diagnosis and Treatment of Adenoids by the General Practitioner.—Dr. FRANCIS HUBER read this paper. He said that a suspicion of the presence of adenoids was often excited by the frequent occurrence of colds in the head. Dyspnea on exertion without evident heart or lung trouble, should not be attributed solely to the associated anemia, but search should be made for obstruction in the naso-pharynx. He had been informed by Dr. William Oliver Moore that certain forms of trachoma were an indication of the lymphoid state. Often a prominent vein running across the root of the nose would

direct attention to impeded circulation in the naso-pharynx. Inspiratory spasm was sometimes an indication of obstruction in the naso-pharynx. Digital exploration in children after a little practice was readily performed, and yielded the desired information. The appearance of small diffuse lymphoid projections on the pharyngeal mucous membrane about the level of the soft palate points to the existence of pharyngeal adenoids. The earlier the treatment was instituted the greater one's success in preventing the secondary changes. In the milder cases there was simply a profuse hypertrophy or a few small masses. Attention to the general health and careful nasal irrigation were advisable. If there were marked symptoms the growth should be removed at once with the finger or curette. He preferred to use a modification of the Gottstein curette. For a week or more before the operation the naso-pharynx should be gently irrigated with salt solution. The operation could be done in the intubation position or with the child lying on the lap of an assistant and the head held between the knees of the operator. Iodide of iron, or iron, arsenic and strychnia should be given for a number of months after the operation. In Germany and Austria narcosis was not employed as a rule; in America most operators used it. Personally he preferred to operate without narcosis. The contraindications are the existence of an acute otitis, bronchitis or an acute inflammatory process in any part of the respiratory tract. As a rule the bleeding was not excessive provided there was no constricting clothing about the neck. If there was no obstruction anteriorly the relief would be immediate and the improvement in the general health very marked.

Dr. KOPLIK said that he had been interested in Dr. Chapell's contention, that the diagnosis of adenoids should be cautiously made because of the liability of confounding it with other conditions. He had several cases of tongue swelling. In some infants of four or five months on passing the finger upward into the pharynx one would feel normally a little adenoid tissue. The great question was to decide upon the best time for doing this operation. He regarded the operation for adenoids as a serious one, particularly in cases of chorea occurring in older children. He believed that the large wound surface in such cases often favored reinfection of the endocardium. Every other source of infection should be ruled out before deciding upon an operation for adenoids.

Dr. WENDELL C. PHILLIPS said that after an extensive experience he had come to the conclusion that when young children have frequent attacks of suppuration of the middle ear it might be said almost positively that there were adenoid vegetations in the vault of the pharynx. It should never be

forgotten that what was spoken of as adenoids was nothing more than lymphoid tissue. The part under discussion this evening was the lymphoid ring and it involved the chain of glands, including the tonsils and the glands at the base of the tongue. It must be remembered therefore that we were dealing with the lymphoid condition. He was surprised that Dr. Chapell had found so many cases of tonsillar hypertrophy without adenoids in the pharyngeal vault. This was directly opposed to his own experience. In making the diagnosis of adenoids he would most emphatically condemn the method of digital exploration. By such exploration the adenoid tissue if present would be broken down and if the finger were not properly sterilized an infection might be set up. A greater objection to this method of examination was that the examiner at once makes the patient his enemy and consequently has little chance to repeat the examination or carry out the treatment. For many years he had made it a practice to examine even very young children with the mirror and tongue depressor, and while he sometimes failed, he succeeded in a large proportion of cases. Some years ago he had become impressed with the mischief done by adhesions in neglected cases of adenoids. Frequently adhesive bands might be seen stretching from the arch to the cushion of the Eustachian tubes. They impair the hearing materially.

Dr. B. VAN D HEDGES said he felt positive that he had seen nervous children who had received such a shock from having an adenoid operation done on them without narcosis that it had required many months to recover from it. Moreover, the operation could usually be done much more thoroughly under narcosis.

Dr. JOHN DORING said that some years ago almost every child who was a mouth-breather was said to be a proper subject for the adenoid operation; hence he was glad that Dr. Chapell had been so conservative in his remarks on diagnosis. He felt that not sufficient stress had been laid upon constitutional dyscrasia that exists in these adenoid cases. If the general condition were neglected there would be a new growth of the adenoid and this probably explained the remark of Dr. Phillips, that fragments would be found so frequently after adenoid operations. Syphilis, tuberculosis and scrofulosis were the underlying conditions which should be borne in mind and well considered in conjunction with the treatment. Most of these children live amid unhygienic surroundings, and the operation could not therefore end the treatment. In a very nervous child it was probably well to do the operation under narcosis, but in the majority of cases it seemed to him there was less excitement and less annoyance if the operation were done quickly without an anesthetic.

Dr. HEIMAN said that it was easy to recognize the lymphatic diathesis as taking a prominent part in the etiology of adenoids in children. He was not so sure that the lithemic diathesis had anything to do with adenoids and he was not aware that there was any well authenticated case of adenoids arising from gonorrheal infection. He had used chloroform in adenoid operations and preferred to use an anesthetic in this operation.

Dr. CHAPPELL said that there might be a small portion of healthy adenoid tissue in the pharynx requiring no treatment. Before doing the operation a hypertrophic rhinitis should be looked for and treated if present. In young infants this hypertrophic rhinitis was usually a hyperemia, and in such cases he could not speak too highly of the local and internal use of suprarenal extract. He would advise dissolving 5 grains of this extract in one teaspoonful of warm water and using in the nostrils every night for a week or ten days. He would not employ an anesthetic except in very nervous children. It was seldom necessary to curette down the posterior wall. He had himself seen two cases of gonorrheal rhinitis. Heredity was certainly a most important factor in the etiology of adenoids.

INGUINAL COLOSTOMY.

WILLIAM J. MAYO (*American Medicine*) says:—

1. Colostomy is not now a rival of excision of the rectum for malignant disease and should only be employed in hopeless cases presenting obstructive phenomena.

For a permanent colostomy, the combination of Wyeth's and Bailey's methods gives a satisfactory result.

3. Colostomy preliminary to excision of the rectum should be located high on the colon to give sufficient length of sigmoid to permit restoration of the continuity of the bowel.

4. For ulceration and other conditions in which the upper limit of the disease is not definitely known, the interior of the bowel should be explored through the inguinal incision in order to determine the proper site of the opening.

5. Right-sided colostomy has an increasing field of usefulness, as in amebic dysentery, chronic colitis, etc.

BOOK REVIEWS

- "Manual of the Diseases of Children." By John Madison Taylor, A.M., M.D., and William H. Wells, M.D. Second edition, thoroughly revised and enlarged, octavo, 840 pages. Illustrated. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1901. Price, \$4.50.

This so-called Manual, now in its second edition, might in its enlarged and improved form perhaps more properly be called a Text Book. It is clearly worthy to be elevated to that rank. It is, as its authors state in the preface, "a succinct presentation of the whole subject of the diseases of children." The original work has been rewritten and brought up to date. The writers have endeavored to maintain a due sense of proportion by devoting special attention to diseases most commonly met with; they have not attempted to display erudition at the expense of usefulness by dilating upon comparatively rare affections. Symptoms and treatment receive special attention throughout the work. The sections on infant feeding and modification of milk are clear and scientific, and set forth the views of most pediatricians of note in America.

However, the method referred to therein as "Westcott's method of calculating the proportions of cream, milk and milk-sugar" is not claimed by that able author as original, but is accredited by him to the proper author. (See *International Clinics*, Oct. 1900. "The Scientific Modification of Milk," by Dr. Thompson S. Westcott).

Several articles by specialists in various branches have been incorporated. The article on the blood and its disorders, by Dr. Caspar Sharpless, is more thorough than one would be inclined to look for in a work devoted to the diseases of children. The beautiful colored plate from the *Medical News*, showing Koplik's spots, is reproduced, and will prove of value to those unfamiliar with this phenomenon. The paper is of excellent quality, so that the illustrations are satisfactory. The press-work reflects credit on the publishers, and the proof-reading carefully done.

It is perhaps a pity that in as much as the authors undertook a description of the plasmodium malariae, they did not describe to some extent its cycle of development outside of the human body. On page 205 we notice that four or five drops of tincture of opium in starch water is recommended as a rectal injection in the later stages of acute milk infection. This would seem to be a very large dose for an infant. On page 200 "bacterium coli communis" occurs, evidently a misprint.

ABSTRACTS

DIABETES MELLITUS—ITS ETIOLOGY AND TREATMENT.

Dr. ADRIAN D. WILLIAMS (*Dietetic & Hygienic Gazette*, 1901, XVII, 165) reports the following case:

Nellie L., aged 16. This case is particularly interesting because of the youth of the patient. First seen October 3d, presenting the usual symptoms of diabetes. Had an insatiable appetite, and her mother stated that the amount of water she drank was "simply enormous." An attempt to restrict this resulted in her resorting to various devices to obtain water surreptitiously. Symptoms had been present since last spring; patient much run down, skin dry and harsh, suffered from constipation and severe headache. Examination showed sp. grav. of urine, 1036; glucose, 5 per cent.; she passed daily 30 pints of urine. Placed patient on a rigid diet, and carbohydrates were strictly interdicted. As in other cases, patient was given careful instructions regarding hygiene, exercise, frequent bathing, cold spinal douches, and Turkish baths. Arsenauero was prescribed, beginning with 10 drops in one-half goblet of water three times daily, instructions given to gradually increase the dose. Contrary to expectation, patient took kindly to restricted diet; hygienic measures recommended were carried out faithfully. The patient was seen twice each week, an examination of the urine made each time. For two weeks no great change occurred, although the girl said she felt much better. Hunger, thirst, and polyuria reduced. On October 21st, however, the percentage of sugar had fallen to a trifle less than 3 per cent., quantity of urine remarkably lessened, patient taking her treatment faithfully, dose of arsenauero having reached 28 drops three times three times a day. From this time there was a steady decrease in the quantity of urine and of sugar. There was a marked improvement in the general condition of the patient. November 4th, glucose is absent for the first time. Weight of patient increased from 92 pounds (when first seen) to 100 pounds; skin softer, is healthier looking, bowels acting well, headache had ceased; still passing abnormal quantity of urine, yet much less than two weeks previously. Patient taking 40 drops arsenauero t. i. d., no physiological symptoms had developed, and as patient was steadily improving, she was instructed to continue at that dosage. November 10th, small quantity of sugar was detected, although the patient's condition was steadily improving. Next examination no sugar was found, and he allowed the patient a limited amount of carbohydrates—a change she welcomed. Since that time no sugar has been found. The weight of the patient, now on a more liberal diet, is 108 pounds; is feeling in good physical condition, parents stating that the change in her disposition is most marked. Her appetite continues a trifle greater than that of most girls of her age, but the excessive thirst and polyuria have ceased.

THE MEDICAL TREATMENT DURING THE ADOLESCENT PERIOD.

EDWIN ROSENTHAL, Philadelphia (*Medical Fortnightly*), says: The adolescent period in the female may be said to be as critical in results as the menopause. The commonest symptom that presents itself is the one that refers to the menstruation. And it is in all probability that this disordered condition is the most conspicuous factor that needs correction.

Two classes of cases are most numerous, and may be divided into: 1st. That class that has never menstruated, and 2d. That class, that may have begun, shown a very slight discharge at infrequent intervals—once in six or nine months—but which has never grown to an extent at any time that may be termed a normal flow. The history of these cases is very generally of the same character, and may be briefly summarized. Digestive disorders, headaches, languor, flushing, sensations of fullness in the abdomen, disturbed or unnatural sleep, or sleepy conditions during the daytime; often some cutaneous affection—acne the most common. Whilst the symptoms may be present in some, frequently only part of them may be present in certain cases, as the skin affection. During the period that should be termed the “menstrual” period the symptoms are generally aggravated. If the “acne” be present at this time a fresh crop of pimples appears, and thus can be noted other symptoms.

In all cases of menstrual disorders in the young, the cause must be found, and if found, corrected. This of certainty directs the treatment. In cases where the menstruation has never appeared, it should always be a certain rule to have the sufferer examined by the mother. In quite a number of instances anatomical conditions have shown the reason. In four cases an “impervious hymen” was the cause. In two cases the “uterus” became the receptacle, and contained the result of numerous menstruations, becoming enlarged even above the pubic bones; the cervix being impervious. In several instances there was an entire absence of the uterus and ovaries. This happened in two cases, both married, which were examined for this reason. In one case, an otherwise well developed young woman, age 21, there was an absence of a vagina. For such cases nothing can be done in the line of medication, but judicious surgical procedures may in indicated cases (impervious hymen or cervix) make a cure. Where, however, no necessary organs exist, nothing can be done, except such rules as the regulation of the bowels, etc., at stated intervals, which give much relief to the frequently present nervous symptoms. Where, however, no anatomical reasons exist, and the patient suffers from suppression of the menstruation, entire, or in part, much can be done to aid a cure.

The question of age frequently enters as an answer to results. We have with us such a conglomeration of different nationalities, that the “age” question is a very vital one. Inasmuch, as frequently, the treatment of menstrual disorders may be wrongly applied, as an example: To attempt treatment of a girl of 13 or 14 years, when her mother only began menstruation at 12 years. Experience has taught me that girls born in warmer countries, or descending from such parentage, begin to men-

struate much earlier than those of colder climes. For instance, girls from Italy or Cuba begin at 12 or 13, where those from Norway or Sweden begin at 15 or 16 years. Again, in races I have seen some surprising differences. The colored race has presented a girl of 10 years, and often I have seen girls of Russian-Jewish parentage begin at 10 or 11 years. So that the question of age should always enter into the treatment.

Whilst the most common symptom of disordered menstruation is "anaemia," and as the better known "chlorosis," or vulgarly "green sickness," its absence need not preclude the use of the most common of all our remedies—iron. Anaemia alone may be the cause of suppressed menstruation, and while its presence may be looked upon as a certain cause, its treatment is as essential for the appearance of the menstruation as it should be for the general health of the patient. That anaemia in girls is most frequently found at this time leads to the common belief that anaemia, green sickness, or whatever name this blood condition may receive, is the chief factor in menstrual disorders.

Besides the condition of the blood as a cause of suppressed menstruation, other well-known conditions equally play a prominent part. Even if the patient should suffer from such diseases (tuberculosis as an example) the presence of a menstrual flow has such an encouraging influence upon the mind of the sufferer that some attempt should be made, and as the method pursued by myself for many years can only be of benefit, such conditions are not contraindications for its use.

Iron is the chief remedy in menstrual disorders, and may be given at all times—before, after, and during the flow. A certain time in the life of the patient should be set apart for active and specific treatment. The time chosen should be when the symptoms are most aggravated. The days, one, two, or three, should be set apart, and our treatment should always culminate to this period. If we fail at the one, then we should begin again, and pursue our treatment until the second period, when the specific method should again be applied, and thus on. Even if failure should mar the first, second, or even the fifth period, the menstruation will appear if the treatment be applied in a rational way.

Between the periods I always order the use of iron in three or four daily doses. I have used all forms and varieties, from the tincture of the chloride, which is so often objected to, to the different kinds the Pharmacopoeia presents, in pill form, as the Blaud pill, simple or modified. My experience brings me back to Gude's pepto-mangan. Gude's pepto-mangan is now the most common in use, and there are so very many similar preparations in the apothecaries that care should be exercised in obtaining the genuine. I always order Gude's pepto-mangan given with milk. If the mixture is clean, uncoagulated, and palatable, then I know my patient has received what I ordered.

A PLEA FOR THE EARLIER RECOGNITION OF SQUINT IN
CHILDREN BY THE FAMILY PHYSICIAN AND THE
EARLIER APPLICATION OF THE METHODS OF
TREATMENT.

C. A. VEASEY (*Medical News*). The larger number of cases depend upon some disturbance between the relation of accommodation and convergence, a condition generally brought about by some error of refraction. It would seem, therefore, that the proper procedure in all cases of squint, excepting, perhaps, those of paralytic origin, would be to determine whether there is present any error of refraction. If one is familiar with the use of the ophthalmoscope this can be readily done; if not, one drop of a solution of atropine, four grains to the ounce, should be instilled into each eye night and morning and the child's eyes protected from strong light; in fact, dark glasses should be worn out-of-doors if the child is old enough to keep them on. Should the squint disappear, or become very much better, it will prove that an error of refraction is present in the case, the strain upon the accommodation having been relieved by the action of the atropine upon the ciliary muscle, and the patient should be carefully glassed. Should the patient be too young to wear glasses, the atropine instillations, in half strength, may be kept up at varying intervals in the meantime in order that the excessive accommodative efforts may be relieved. The youngest patient for whom glasses were prescribed by the writer was three years of age, a case of convergent squint with Jacksonian epilepsy, in which the squint disappeared and the number of convulsions was markedly reduced. Frequently little ones from three and one-half to five years of age have worn glasses and complete correction of their squint has resulted in a comparatively short period of time. If the wearing of glasses for several weeks fails to correct the defect a system of muscle gymnastics known as "orthoptic exercises" should be employed. The apparatus required is an ordinary box stereoscope with a series of double pictures. The patient is first taught to recognize both pictures on the cards, or to see double, thus showing that both eyes are used at the same time, and after this has been accomplished to fuse the two pictures into one. This method is of very little use in cases of high degree of squint in which the glasses produce but little change; but in cases of low degree, or in cases much benefited by the wearing of glasses, or in cases of residual squint after operation, it is decidedly of the greatest value.

Should the wearing of the proper glasses and the faithful systematic employment of orthoptic exercises fail to cure the squint, recourse must be had to operative measures. This usually consists of a tenotomy of one muscle or an advancement of its opponent, or both, depending upon the amount of deviation to be dealt with, the variety of the squint, the strength of the opposing muscle, and the condition of the visual acuity of each eye. If the defect is convergent the eyes should not be entirely straightened at the operation, but a small amount of residual squint should be permitted to remain, as there is always a slight after-tendency to divergence.

For the same reason in operating for divergent squint it is better to produce a very slight convergence.

As to the age of the patient, it is best to wait until the child is about six years old, though there are a few cases in which earlier operation seems advisable.

A SIMPLE METHOD FOR WRITING PRESCRIPTIONS FOR CHILDREN.

MAX HUPNER (*Medical Record*, Nov. 24, 1900) says: As is well known the method of calculating the dose for a child is, according to Cowling's rule: age at next birthday divided by twenty-four. A simple method for writing the prescription, in order to avoid much calculation, is to make it contain exactly twenty-four doses, whence it necessarily follows that the entire amount of any drug in the prescription will be the adult dose multiplied by the age at next birthday. Let us, for example, take three drugs, x , y and z , of which the adult dose of x is m v., of y m viii., and of z m x. We write our prescription as follows:

R x
 y
 z
 Aq.....q.s, ad etc.

Now if we make the entire quantity $\mathfrak{z}$ iii. and the amount taken at each dose $\mathfrak{z}$ i., our prescription will contain twenty-four doses, thus:

R x
 y
 z
 Aq.....q.s.ad $\mathfrak{z}$ iiij
 M. S.— $\mathfrak{z}$ i. t.i.d.

If the child at its next birthday is one year old, our prescription is completed by simply putting the adult dose after each item, thus.

For baby F.—, aged one year.

R x mxv
 y $mxviiij$
 z mx
 M. S.— $\mathfrak{z}$ i. t.i.d.

If three years old, simply put down three times the adult dose, thus:

For Baby F.—, aged three years.

R x mxv
 y $mxxiv$
 z $mxix$
 Aq.....q.s ad $\mathfrak{z}$ ij
 M. S.— $\mathfrak{z}$ i. t.i.d

If ten years old, put down ten times the adult dose. thus.

For Baby F, , aged ten years.

℞ *x*... ..*ml*
y.....*mlxxx*
z.....*mc*
 Aq.....q.s ad $\mathfrak{z}$ ij
 M. S.— $\mathfrak{z}$ i. t.i.d.

To exemplify with an ordinary cough mixture:

℞ Syr. ipecac.....
 Ammon. mur.....
 Ex. scillæ fl.....
 Aq.....q.s ad $\mathfrak{z}$ ij
 M. S.— $\mathfrak{z}$ i. every three hours.

If the child is one year old (at next birthday) we put down the adult dose after each item, as follows:

℞ Syr. ipecac.....*mx*
 Ammon. mur.....gr.v
 Ex. scillæ fl.....*mij*
 Aq.....q.s ad $\mathfrak{z}$ ij
 M. S.— $\mathfrak{z}$ i every three hours.

If six years old, put down six times the adult dose, thus:

For Baby F.—, aged six years.

℞ Syr. ipecac*mix*
 Ammon. mur.....gr.xxx
 Ex.scillæ fl.....*mxij*
 Aq.....q.s. ad $\mathfrak{z}$ ij
 M. S.— $\mathfrak{z}$ i. every three hours.

Another slight advantage is, that we may give the same drugs to several children of a family without writing different prescriptions. Thus, in the first example (the cough mixture) we may give the same prescription for three children, aged respectively one, three and five years (at next birthday), by telling the mother to give one child $\mathfrak{z}$ i., another $\mathfrak{z}$ ii. and the oldest $\mathfrak{z}$ v. at each dose.

As this method depends upon Cowling's rule, it is applicable only where Cowling's rule is applicable. In giving opiates, etc., where less than $\frac{1}{24}$ th of adult dose is given, we cannot, of course, make use of this method.

The fact that a dose for a child should be regulated, not by its age, but by its physical development, does not militate against the use of this method; for if a child of three years has the development of a child of five years, it may for purposes of dosage, be considered a five-year-old-child, and the prescription calculated accordingly.

A CASE OF TRAUMATIC TETANUS CURED WITH ANTITOXIN.

BLANTON A. HILLSMAN (*Virginia Medical Semi-Monthly*, Aug. 10, 1900) writes as follows:

This case is reported not on account of the rarity of the disease but on account of the negative results previously obtained from tetanus antitoxin in Richmond. Only one case, I am informed, showed any improvement, finally dying from heart failure, said to have been caused from smoking cigarettes. This last complication was in my case guarded against by the free use of stimulants.

Thinking it a case of quinsy, I prescribed a gargle and promised to see her the next morning. About two hours after she again came and asked me to call and see her child at once. The writer on arriving at the house found the girl sitting up in bed complaining of a stiffness in her jaws, which could only be opened about one-fourth of an inch. I could not see in her throat so gave bromides to quiet her nervousness, and the next morning found her no better. Asked to see her tongue, after protruding it she bit it before she could return it to her mouth; asked to take a seat in a chair she could not bend herself and went over like a log of wood. The muscles of the lower extremity, abdomen, neck and jaws very tense; pulse quick; temperature $100\frac{1}{2}^{\circ}$ F. and no pain. Her mother said that four weeks previously she had stuck a nail in her foot, but it did not go deep. The wound had healed without any tenderness on pressure.

May 18th.—Found patient worse; could take only a spoonful of food at a time, and paroxysms much more frequent.

May 19th.—Child worse; cannot sleep at night for biting her tongue; taking scarcely any nourishment; antitoxin suggested to parents, but they were too poor to buy it.

May 20th.—Condition same.

May 24th.—Parke, Davis & Co.'s antitoxin arrived, and its use commenced at once; 15 cc., or one bottle, was given every twelve hours; bromides, chloral and cannabis indica continued. Pulse, 110; temperature, 101° F.

May 25th.—No improvement in condition.

May 26th.—Some improvement; can bend legs slightly, and abdominal muscles not so tense; muscles of neck and jaws show no improvement; still biting tongue.

May 27th.—Condition same; treatment continued.

May 28th.—Can open mouth wider, and does not bite tongue any more.

May 29th to June 5th.—Steadily improving; no antitoxin given since May 28th; bromides, chloral and cannabis indica continued.

June 6th.—Patient can walk a little; muscles not tense or drawn, but she seems to have forgotten how to walk.

June 15th.—Child seems entirely well; goes where she wants to and does not complain; discharged as cured, and at this writing there is no further trouble.

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